STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A5-B3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A5-B3-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 67	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.30**	**1.48**
	TOTAL FCU = SAR Length (67) X Multiplication Factor (0.00125) X Total FCI	**0.09**	**0.11**	**0.12**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A5-B4-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A5-B4-(1), S2-TRIB3-A5-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 198	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.50**
	TOTAL FCU = SAR Length (198) X Multiplication Factor (0.00125) X Total FCI	**0.28**	**0.33**	**0.37**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A5-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A5-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 657	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.34**	**1.52**
	TOTAL FCU = SAR Length (657) X Multiplication Factor (0.00125) X Total FCI	**0.95**	**1.10**	**1.25**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A6-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	2	4	7
Baseline SAR Name(s): S2-TRIB3-A6-(1)	H2c. Channel Bank Stability *(e)*	6	7	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	3	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 844	Hydrologic Subtotal	24	30	37
	Hydrologic FCI = Subtotal / 100	**0.24**	**0.30**	**0.37**
	WQ1a. Bank Stability *(e)*	6	7	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	4	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	27	37	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.34**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-13	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	2	2	2
	HB4. Pool Variability	2	2	3
	HB5. Sediment Deposition and Scouring	3	5	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	6	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	7
	HB10. Vegetative Protection *(e)*	5	7	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	37	47	58
	Habitat FCI = Subtotal / 120	**0.31**	**0.39**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.89**	**1.15**	**1.44**
	TOTAL FCU = SAR Length (844) X Multiplication Factor (0.00125) X Total FCI	**0.94**	**1.21**	**1.52**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
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- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S2-TRIB3-A6-(2)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S2-TRIB3-A6-(2)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	40	41	43
445	**Hydrologic FCI = Subtotal / 100**	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-13	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	8	8	8
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.38**	**1.57**
	TOTAL FCU = SAR Length (445) X Multiplication Factor (0.00125) X Total FCI	**0.66**	**0.77**	**0.87**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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- Created pools will retain water
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- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S2-TRIB3-A7-(0)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42
773	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	3	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	39	46
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-15	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (773) X Multiplication Factor (0.00125) X Total FCI	**1.13**	**1.30**	**1.48**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A7-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A7-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,318	Hydrologic Subtotal	41	42	44		
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-12	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.19**	**1.39**	**1.58**		
	TOTAL FCU = SAR Length (1318) X Multiplication Factor (0.00125) X Total FCI	**1.96**	**2.29**	**2.60**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S2-TRIB3-A7-(2)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S2-TRIB3-A7-(2)	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	41	42	44
508	**Hydrologic FCI = Subtotal / 100**	**0.41**	**0.42**	**0.44**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*:	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-12	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.19**	**1.39**	**1.58**
	TOTAL FCU = SAR Length (508) X Multiplication Factor (0.00125) X Total FCI	**0.76**	**0.88**	**1.00**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A7-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A7-(3)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	3	3	3
Proposed SAR Length (LF): 700	Hydrologic Subtotal	49	50	52
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: A-12	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	3	3	3
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	49	59	67
	Habitat FCI = Subtotal / 120	**0.41**	**0.49**	**0.56**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.38**	**1.58**	**1.77**
	TOTAL FCU = SAR Length (700) X Multiplication Factor (0.00125) X Total FCI	**1.21**	**1.38**	**1.55**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A7-B2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	2	4	7		
Baseline SAR Name(s): S2-TRIB3-A7-B2-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	4	6	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 534	Hydrologic Subtotal	25	30	37		
	Hydrologic FCI = Subtotal / 100	**0.25**	**0.30**	**0.37**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	34	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-12	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	1	1	1		
	HB4. Pool Variability	2	2	3		
	HB5. Sediment Deposition and Scouring	5	5	5		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	39	46	55		
	Habitat FCI = Subtotal / 120	**0.33**	**0.38**	**0.46**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.01**	**1.17**	**1.41**		
	TOTAL FCU = SAR Length (534) X Multiplication Factor (0.00125) X Total FCI	**0.67**	**0.78**	**0.94**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A7-B3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A7-B3-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 112	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-12	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	5	5	5		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.29**	**1.46**		
	TOTAL FCU = SAR Length (112) X Multiplication Factor (0.00125) X Total FCI	**0.15**	**0.18**	**0.20**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A7-B4-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	2	4	7		
Baseline SAR Name(s): S2-TRIB3-A7-B4-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 548	Hydrologic Subtotal	28	31	36		
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.31**	**0.36**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	38	45		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.48**	**0.56**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-12	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	2	2	3		
	HB5. Sediment Deposition and Scouring	3	5	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	6	7	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	2	5	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	38	47	58		
	Habitat FCI = Subtotal / 120	**0.32**	**0.39**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.01**	**1.18**	**1.40**		
	TOTAL FCU = SAR Length (548) X Multiplication Factor (0.00125) X Total FCI	**0.69**	**0.81**	**0.96**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A7-B5-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A7-B5-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 353	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-12	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.30**	**1.48**		
	TOTAL FCU = SAR Length (353) X Multiplication Factor (0.00125) X Total FCI	**0.49**	**0.57**	**0.65**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A8-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A8-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	3	3	3
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 514	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (514) X Multiplication Factor (0.00125) X Total FCI	**0.75**	**0.87**	**0.98**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A8-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A8-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 359	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.51**		
	TOTAL FCU = SAR Length (359) X Multiplication Factor (0.00125) X Total FCI	**0.52**	**0.60**	**0.68**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A8-B1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	2	4	7
Baseline SAR Name(s): S2-TRIB3-A8-B1-(1)	H2c. Channel Bank Stability *(e)*	7	7	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	2	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 169	Hydrologic Subtotal	23	29	36
	Hydrologic FCI = Subtotal / 100	**0.23**	**0.29**	**0.36**
	WQ1a. Bank Stability *(e)*	7	7	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	37	45
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.46**	**0.56**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	1	1	1
	HB4. Pool Variability	2	2	3
	HB5. Sediment Deposition and Scouring	3	4	4
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	3	5	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	7	7	7
	HB10. Vegetative Protection *(e)*	2	5	9
	HB11. Riparian Zone *(e)*	6	7	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	34	43	54
	Habitat FCI = Subtotal / 120	**0.28**	**0.36**	**0.45**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.90**	**1.11**	**1.37**
	TOTAL FCU = SAR Length (169) X Multiplication Factor (0.00125) X Total FCI	**0.19**	**0.23**	**0.29**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A8-B2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	2	4	7		
Baseline SAR Name(s): S2-TRIB3-A8-B2-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	2	4	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 129	Hydrologic Subtotal	23	28	36		
	Hydrologic FCI = Subtotal / 100	**0.23**	**0.28**	**0.36**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	37	45		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.46**	**0.56**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	2	3	3		
	HB3. Stream Bottom Substrate	1	1	1		
	HB4. Pool Variability	2	3	3		
	HB5. Sediment Deposition and Scouring	4	4	4		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	2	5	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	36	45	54		
	Habitat FCI = Subtotal / 120	**0.30**	**0.38**	**0.45**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.93**	**1.12**	**1.37**		
	TOTAL FCU = SAR Length (129) X Multiplication Factor (0.00125) X Total FCI	**0.15**	**0.18**	**0.22**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A9-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	6	7		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A9-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 130	Hydrologic Subtotal	36	36	38		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.36**	**0.38**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	29	36	45		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.36**	**0.45**	**0.56**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	2	3	3		
	HB3. Stream Bottom Substrate	2	2	2		
	HB4. Pool Variability	2	3	2		
	HB5. Sediment Deposition and Scouring	2	5	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	6		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	2	5	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	34	46	56		
	Habitat FCI = Subtotal / 120	**0.28**	**0.38**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.00**	**1.19**	**1.41**		
	TOTAL FCU = SAR Length (130) X Multiplication Factor (0.00125) X Total FCI	**0.16**	**0.19**	**0.23**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A9-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A9-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 447	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	5	5	5		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.50**		
	TOTAL FCU = SAR Length (447) X Multiplication Factor (0.00125) X Total FCI	**0.64**	**0.74**	**0.84**		

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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A10-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A10-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 105	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	1	1	1
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.50**
	TOTAL FCU = SAR Length (105) X Multiplication Factor (0.00125) X Total FCI	**0.15**	**0.17**	**0.20**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S2-TRIB3-A10-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S2-TRIB3-A10-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 302	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	46	56	64		
	Habitat FCI = Subtotal / 120	**0.38**	**0.47**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.53**		
	TOTAL FCU = SAR Length (302) X Multiplication Factor (0.00125) X Total FCI	**0.44**	**0.51**	**0.58**		

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(e) Score shown is the average of the left and right bank scores.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-A10-B1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-A10-B1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 123	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.50**
	TOTAL FCU = SAR Length (123) X Multiplication Factor (0.00125) X Total FCI	**0.18**	**0.20**	**0.23**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S2-TRIB3-B1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S2-TRIB3-B1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 283	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.51**
	TOTAL FCU = SAR Length (283) X Multiplication Factor (0.00125) X Total FCI	**0.41**	**0.47**	**0.53**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T1-BAKER-(0)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	8	8	8
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	1	1	1
Proposed SAR Length (LF): 2,710	Hydrologic Subtotal	51	52	54
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	1	1	1
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	1	1	1
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	34	43	51
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.54**	**0.64**
	HB1. Flow Regime	2	2	2
Reference Figure: A-4, A-5	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	1	1	1
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	4	4	4
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	47	57	65
	Habitat FCI = Subtotal / 120	**0.39**	**0.48**	**0.54**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.33**	**1.54**	**1.72**
	TOTAL FCU = SAR Length (2710) X Multiplication Factor (0.00125) X Total FCI	**4.51**	**5.22**	**5.83**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T1-BAKER-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): T1-BAKER-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	1	1	1		
Proposed SAR Length (LF): 1,540	Hydrologic Subtotal	46	47	49		
	Hydrologic FCI = Subtotal / 100	**0.46**	**0.47**	**0.49**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	1	1	1		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	1	1	1		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	34	43	51		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.54**	**0.64**		
	HB1. Flow Regime	2	2	2		
Reference Figure: A-5, A-8	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	1	1	1		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	46	56	64		
	Habitat FCI = Subtotal / 120	**0.38**	**0.47**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.27**	**1.48**	**1.66**		
	TOTAL FCU = SAR Length (1540) X Multiplication Factor (0.00125) X Total FCI	**2.44**	**2.85**	**3.20**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T2-BAKER-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	3	5	8
	H2b. Channel Capacity to Flow Frequency	7	7	8
Baseline SAR Name(s): T2-BAKER-(1)	H2c. Channel Bank Stability *(e)*	7	7	7
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	7	7	7
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	1	1	1
Proposed SAR Length (LF): 1,493	Hydrologic Subtotal	39	41	46
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.41**	**0.46**
	WQ1a. Bank Stability *(e)*	7	7	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	1	1	1
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	1	1	1
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	2	3	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	39	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.60**
	HB1. Flow Regime	2	2	2
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	2	2	2
	HB4. Pool Variability	2	3	4
	HB5. Sediment Deposition and Scouring	2	4	7
	HB6. Channel Flow Status	1	1	1
	HB7. Channel Alteration	2	4	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	7	7	7
	HB10. Vegetative Protection *(e)*	6	7	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	6	6	7
	Habitat Subtotal	39	48	61
	Habitat FCI = Subtotal / 120	**0.33**	**0.40**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.30**	**1.57**
	TOTAL FCU = SAR Length (1493) X Multiplication Factor (0.00125) X Total FCI	**2.09**	**2.43**	**2.93**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T2-BAKER-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): T2-BAKER-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,229	Hydrologic Subtotal	41	42	44		
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	3	3	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**		
	TOTAL FCU = SAR Length (1229) X Multiplication Factor (0.00125) X Total FCI	**1.80**	**2.10**	**2.40**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T2-BAKER-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): T2-BAKER-(3)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 698	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**
	TOTAL FCU = SAR Length (698) X Multiplication Factor (0.00125) X Total FCI	**1.02**	**1.20**	**1.36**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
T2-BAKER-TRIB1-(1)	H2a. Channel Condition/ Alteration	3	5	7
	H2b. Channel Capacity to Flow Frequency	4	5	7
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	4	5	7
T2-BAKER-TRIB1-(1)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	3	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	19	25	34
274	**Hydrologic FCI = Subtotal / 100**	**0.19**	**0.25**	**0.34**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	2	3	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	26	34	45
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.33**	**0.43**	**0.56**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3
A-2	HB3. Stream Bottom Substrate	2	2	2
	HB4. Pool Variability	1	2	2
	HB5. Sediment Deposition and Scouring	2	5	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	2	5	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	6	7	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	30	43	54
	Habitat FCI = Subtotal / 120	**0.25**	**0.36**	**0.45**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.77**	**1.04**	**1.35**
	TOTAL FCU = SAR Length (274) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.36**	**0.46**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T2-BAKER-TRIB1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): T2-BAKER-TRIB1-(2), T2-BAKER-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,080	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**
	TOTAL FCU = SAR Length (1080) X Multiplication Factor (0.00125) X Total FCI	**1.57**	**1.84**	**2.09**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
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RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T3-BAKER-(7)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): T3-BAKER-(7)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	1	1	1		
Proposed SAR Length (LF): 430	Hydrologic Subtotal	46	47	49		
	Hydrologic FCI = Subtotal / 100	**0.46**	**0.47**	**0.49**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	1	1	1		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	1	1	1		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	34	43	51		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.54**	**0.64**		
	HB1. Flow Regime	2	2	2		
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	1	1	1		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	46	56	64		
	Habitat FCI = Subtotal / 120	**0.38**	**0.47**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.27**	**1.48**	**1.66**		
	TOTAL FCU = SAR Length (430) X Multiplication Factor (0.00125) X Total FCI	**0.68**	**0.80**	**0.89**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T3-BAKER-TRIB1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): T3-BAKER-TRIB1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 155	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-1	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	5	5	5
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.50**
	TOTAL FCU = SAR Length (155) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.26**	**0.29**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T3-BAKER-TRIB1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	7
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): T3-BAKER-TRIB1-(2)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 190	Hydrologic Subtotal	32	32	35
	Hydrologic FCI = Subtotal / 100	**0.32**	**0.32**	**0.35**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	36	45
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.45**	**0.56**
	HB1. Flow Regime	1	1	1
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	2	2	2
	HB4. Pool Variability	2	2	3
	HB5. Sediment Deposition and Scouring	6	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	6	7	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	6	7	9
	HB11. Riparian Zone *(e)*	6	7	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	42	48	57
	Habitat FCI = Subtotal / 120	**0.35**	**0.40**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.07**	**1.17**	**1.39**
	TOTAL FCU = SAR Length (190) X Multiplication Factor (0.00125) X Total FCI	**0.25**	**0.28**	**0.33**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
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- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T3-BAKER-TRIB1-(3a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): T3-BAKER-TRIB1-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 923	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.50**		
	TOTAL FCU = SAR Length (923) X Multiplication Factor (0.00125) X Total FCI	**1.28**	**1.51**	**1.73**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T3-BAKER-TRIB1-(3b)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): T3-BAKER-TRIB1-(3)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 201	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (201) X Multiplication Factor (0.00125) X Total FCI	**0.29**	**0.34**	**0.39**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
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RATIONALE FOR LIFT

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Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
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(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
T3-BAKER-TRIB1-B1-(1)	H2a. Channel Condition/ Alteration	6	7	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	7		
T3-BAKER-TRIB1-B1-(1)	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	31	33	34		
289	**Hydrologic FCI = Subtotal / 100**	**0.31**	**0.33**	**0.34**		
	WQ1a. Bank Stability *(e)*	6	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification:	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	2	3	4		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	29	37	45		
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.36**	**0.46**	**0.56**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3		
A-2	HB3. Stream Bottom Substrate	2	2	2		
	HB4. Pool Variability	2	3	3		
	HB5. Sediment Deposition and Scouring	6	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	6	6	6		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	36	46	55		
	Habitat FCI = Subtotal / 120	**0.30**	**0.38**	**0.46**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.97**	**1.17**	**1.36**		
	TOTAL FCU = SAR Length (289) X Multiplication Factor (0.00125) X Total FCI	**0.35**	**0.42**	**0.49**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
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STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T3-BAKER-TRIB1-B2-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	7	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): T3-BAKER-TRIB1-B2-(1)	H2c. Channel Bank Stability *(e)*	6	7	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	1	1	1		
Proposed SAR Length (LF): 165	Hydrologic Subtotal	38	40	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.40**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	3	3	3		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	3	3	3		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	5	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	37	45	53		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.46**	**0.56**	**0.66**		
	HB1. Flow Regime	2	2	2		
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	1	1	1		
	HB7. Channel Alteration	6	7	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	7		
	HB10. Vegetative Protection *(e)*	6	7	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	40	50	59		
	Habitat FCI = Subtotal / 120	**0.33**	**0.42**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.38**	**1.56**		
	TOTAL FCU = SAR Length (165) X Multiplication Factor (0.00125) X Total FCI	**0.24**	**0.28**	**0.32**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T3-BAKER-TRIB1-B2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): T3-BAKER-TRIB1-B2-(2)	H2c. Channel Bank Stability *(e)*	8	8	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 136	Hydrologic Subtotal	34	34	36		
	Hydrologic FCI = Subtotal / 100	**0.34**	**0.34**	**0.36**		
	WQ1a. Bank Stability *(e)*	8	8	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	34	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-2	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	2	2	2		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	8	8	8		
	HB10. Vegetative Protection *(e)*	6	7	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	44	50	58		
	Habitat FCI = Subtotal / 120	**0.37**	**0.42**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.25**	**1.42**		
	TOTAL FCU = SAR Length (136) X Multiplication Factor (0.00125) X Total FCI	**0.19**	**0.21**	**0.24**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	6	6	6		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 302	Hydrologic Subtotal	41	42	44		
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (302) X Multiplication Factor (0.00125) X Total FCI	**0.45**	**0.51**	**0.58**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	7	7	7		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 549	Hydrologic Subtotal	35	35	37		
	Hydrologic FCI = Subtotal / 100	**0.35**	**0.35**	**0.37**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	7	7	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	50	58		
	Habitat FCI = Subtotal / 120	**0.34**	**0.42**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.28**	**1.46**		
	TOTAL FCU = SAR Length (549) X Multiplication Factor (0.00125) X Total FCI	**0.75**	**0.88**	**1.00**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
T4-(4)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42
738	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	3	3	3
A-3	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**
	TOTAL FCU = SAR Length (738) X Multiplication Factor (0.00125) X Total FCI	**1.07**	**1.25**	**1.43**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T4-(5)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	7	7	7
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	1	1	1
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 938	Hydrologic Subtotal	36	36	38
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.36**	**0.38**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	7	7	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	50	58
	Habitat FCI = Subtotal / 120	**0.34**	**0.42**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.29**	**1.47**
	TOTAL FCU = SAR Length (938) X Multiplication Factor (0.00125) X Total FCI	**1.30**	**1.51**	**1.72**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-(6)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 799	Hydrologic Subtotal	41	42	44		
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.38**	**1.57**		
	TOTAL FCU = SAR Length (799) X Multiplication Factor (0.00125) X Total FCI	**1.18**	**1.38**	**1.57**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T4-(7)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,047	Hydrologic Subtotal	41	42	44
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-6	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.38**	**1.57**
	TOTAL FCU = SAR Length (1047) X Multiplication Factor (0.00125) X Total FCI	**1.54**	**1.81**	**2.05**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-TRIB2-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 731	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.51**		
	TOTAL FCU = SAR Length (731) X Multiplication Factor (0.00125) X Total FCI	**1.05**	**1.22**	**1.38**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-TRIB2-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 233	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.34**	**1.52**		
	TOTAL FCU = SAR Length (233) X Multiplication Factor (0.00125) X Total FCI	**0.34**	**0.39**	**0.44**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-TRIB2-(1c)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 539	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.34**	**1.52**		
	TOTAL FCU = SAR Length (539) X Multiplication Factor (0.00125) X Total FCI	**0.78**	**0.90**	**1.02**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T4-TRIB2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 517	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-3	HB2. Epifaunal Substrate and Available Cover	3	3	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (517) X Multiplication Factor (0.00125) X Total FCI	**0.74**	**0.87**	**1.00**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T5-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 666	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	5	5	5		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.50**		
	TOTAL FCU = SAR Length (666) X Multiplication Factor (0.00125) X Total FCI	**0.95**	**1.10**	**1.25**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
T5-(1b)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
431	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*:	WQ4. Composition of Organic Matter	3	3	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	39	46
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	3	3	3
A-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	5	5	5
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (431) X Multiplication Factor (0.00125) X Total FCI	**0.61**	**0.71**	**0.80**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T5-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 508	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (508) X Multiplication Factor (0.00125) X Total FCI	**0.73**	**0.86**	**0.98**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T5-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 394	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**
	TOTAL FCU = SAR Length (394) X Multiplication Factor (0.00125) X Total FCI	**0.57**	**0.67**	**0.76**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T5-(4)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 467	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**		
	TOTAL FCU = SAR Length (467) X Multiplication Factor (0.00125) X Total FCI	**0.68**	**0.80**	**0.91**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T5-(5)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	8	8	8
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	1	1	1
Proposed SAR Length (LF): 3,856	Hydrologic Subtotal	50	51	53
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	1	1	1
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	1	1	1
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	34	43	51
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.54**	**0.64**
	HB1. Flow Regime	2	2	2
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	1	1	1
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	4	4	4
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	47	57	65
	Habitat FCI = Subtotal / 120	**0.39**	**0.48**	**0.54**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.32**	**1.53**	**1.71**
	TOTAL FCU = SAR Length (3856) X Multiplication Factor (0.00125) X Total FCI	**6.36**	**7.37**	**8.24**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T5-TRIB1-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 569	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-3, A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	5	5	5
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (569) X Multiplication Factor (0.00125) X Total FCI	**0.80**	**0.93**	**1.06**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T5-TRIB1-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 390	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	5	5	5
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (390) X Multiplication Factor (0.00125) X Total FCI	**0.55**	**0.64**	**0.73**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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RATIONALE FOR LIFT

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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: T5-TRIB1-(1c)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. Instream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 218	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	5	5	5
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (218) X Multiplication Factor (0.00125) X Total FCI	**0.31**	**0.36**	**0.41**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Creation of pools in combination with LWD and GCS and other locations where appropriate
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
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- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T6-BAKER-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,015	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**		
	TOTAL FCU = SAR Length (1015) X Multiplication Factor (0.00125) X Total FCI	**1.48**	**1.74**	**1.98**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T6-BAKER-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): T6-BAKER-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,132	Hydrologic Subtotal	41	42	44		
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-4	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.38**	**1.57**		
	TOTAL FCU = SAR Length (1132) X Multiplication Factor (0.00125) X Total FCI	**1.67**	**1.95**	**2.22**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: T6-BAKER-(1c)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): T6-BAKER-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	8	8	8		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. Instream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 2,732	Hydrologic Subtotal	44	45	47		
	Hydrologic FCI = Subtotal / 100	**0.44**	**0.45**	**0.47**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-4, A-5	HB2. Epifaunal Substrate and Available Cover	3	3	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	4	4	4		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.22**	**1.42**	**1.61**		
	TOTAL FCU = SAR Length (2732) X Multiplication Factor (0.00125) X Total FCI	**4.17**	**4.85**	**5.50**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	6	6	6
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 921	Hydrologic Subtotal	41	42	44
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.37**	**1.55**
	TOTAL FCU = SAR Length (921) X Multiplication Factor (0.00125) X Total FCI	**1.36**	**1.58**	**1.78**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 591	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.37**	**1.55**		
	TOTAL FCU = SAR Length (591) X Multiplication Factor (0.00125) X Total FCI	**0.87**	**1.01**	**1.15**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
AX-S2-TRIB1-(3)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
AX-S2-TRIB1-(3)	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	51	52	54		
701	**Hydrologic FCI = Subtotal / 100**	**0.51**	**0.52**	**0.54**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	39	47	54		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.49**	**0.59**	**0.68**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5		
A-14	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.63**	**1.80**		
	TOTAL FCU = SAR Length (701) X Multiplication Factor (0.00125) X Total FCI	**1.25**	**1.43**	**1.58**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-(4)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB1-(4)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 1,292	Hydrologic Subtotal	51	52	54
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	47	54
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**
	HB1. Flow Regime	2	2	2
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.63**	**1.80**
	TOTAL FCU = SAR Length (1292) X Multiplication Factor (0.00125) X Total FCI	**2.31**	**2.63**	**2.91**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	2	4	7		
	H2b. Channel Capacity to Flow Frequency	2	4	7		
Baseline SAR Name(s): AX-S2-TRIB1-A2-(1)	H2c. Channel Bank Stability *(e)*	2	4	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	2	4	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 791	Hydrologic Subtotal	15	23	36		
	Hydrologic FCI = Subtotal / 100	**0.15**	**0.23**	**0.36**		
	WQ1a. Bank Stability *(e)*	2	4	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	2	4	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	25	34	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.31**	**0.43**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	3	4	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	2	4	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	7	8	9		
	HB12. Riparian Habitat Condition	2	4	7		
	Habitat Subtotal	29	42	59		
	Habitat FCI = Subtotal / 120	**0.24**	**0.35**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.70**	**1.01**	**1.44**		
	TOTAL FCU = SAR Length (791) X Multiplication Factor (0.00125) X Total FCI	**0.69**	**1.00**	**1.42**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-A2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB1-A2-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 876	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**
	TOTAL FCU = SAR Length (876) X Multiplication Factor (0.00125) X Total FCI	**1.28**	**1.49**	**1.69**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A2-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	2	4	7		
	H2b. Channel Capacity to Flow Frequency	2	4	7		
Baseline SAR Name(s): AX-S2-TRIB1-A2-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	2	4	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	2	4	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 342	Hydrologic Subtotal	13	21	34		
	Hydrologic FCI = Subtotal / 100	**0.13**	**0.21**	**0.34**		
	WQ1a. Bank Stability *(e)*	2	4	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	2	4	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	23	34	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.29**	**0.43**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	2		
	HB5. Sediment Deposition and Scouring	1	3	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	1	3	6		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	2	4	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	4	7		
	Habitat Subtotal	21	36	54		
	Habitat FCI = Subtotal / 120	**0.18**	**0.30**	**0.45**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.60**	**0.94**	**1.38**		
	TOTAL FCU = SAR Length (342) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.40**	**0.59**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A3-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 227	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (227) X Multiplication Factor (0.00125) X Total FCI	**0.33**	**0.39**	**0.44**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-(1a)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,071	Hydrologic Subtotal	51	52	54		
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	47	54		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**		
	HB1. Flow Regime	2	2	2		
Reference Figure: A-14, A-17	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.63**	**1.80**		
	TOTAL FCU = SAR Length (1071) X Multiplication Factor (0.00125) X Total FCI	**1.91**	**2.18**	**2.41**		

<table>
<tr><th>STREAM ASSESSMENT REACH (SAR) INFORMATION</th><th>SWAMPIM METRICS (a, b, c, d)</th><th>END OF CONSTRUCTION</th><th>END OF MONITORING</th><th>AT MATURITY</th><th>MITIGATION ACTIVITIES / WORK PERFORMED</th><th>RATIONALE FOR LIFT</th></tr>
<tr><td rowspan="3">Proposed SAR Name:
AX-S2-TRIB1-A4-(1b)</td><td>H1. Flow Regime and Groundwater Interaction</td><td>2</td><td>2</td><td>2</td><td rowspan="31">- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management</td><td rowspan="31">- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity</td></tr>
<tr><td>H2a. Channel Condition/ Alteration</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>H2b. Channel Capacity to Flow Frequency</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td rowspan="8">Baseline SAR Name(s):
AX-S2-TRIB1-A4-(1)</td><td>H2c. Channel Bank Stability (e)</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>H3a. Channel Sinuosity</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>H3b. Bottom Substrate Composition</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>H3c. In stream Bottom Topography OR Manning’s n (f)</td><td>4</td><td>4</td><td>5</td></tr>
<tr><td>H3d. Channel Incision</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>H4a. Pools</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>H4b. Channel Flow Status</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>Hydrologic Subtotal</td><td>49</td><td>50</td><td>52</td></tr>
<tr><td rowspan="2">Proposed SAR Length (LF):
652</td><td>Hydrologic FCI = Subtotal / 100</td><td>0.49</td><td>0.50</td><td>0.52</td></tr>
<tr><td>WQ1a. Bank Stability (e)</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>Mitigation Zone:
Zone A</td><td>WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition (e, g)</td><td>7</td><td>7</td><td>7</td></tr>
<tr><td rowspan="2">Stream Classification
Ephemeral</td><td>WQ2. Water Clarity</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation (h)</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td rowspan="4">Multiplication Factor (i) :
0.00125</td><td>WQ4. Composition of Organic Matter</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>WQ5. Land Use Pattern Beyond Immediate Riparian Zone (e)</td><td>9</td><td>9</td><td>9</td></tr>
<tr><td>WQ6a. Riparian Zone Width (from stream edge to field) (e)</td><td>5</td><td>7</td><td>9</td></tr>
<tr><td>WQ6b. Riparian Zone Vegetation Protection/Completeness (e)</td><td>2</td><td>6</td><td>9</td></tr>
<tr><td rowspan="3">Mitigation Design Type:
Restoration</td><td>Water Quality / Biogeochemical Subtotal</td><td>39</td><td>47</td><td>54</td></tr>
<tr><td>Water Quality / Biogeochemical FCI = Subtotal / 80</td><td>0.49</td><td>0.59</td><td>0.68</td></tr>
<tr><td>HB1. Flow Regime</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td rowspan="17">Reference Figure:
A-14</td><td>HB2. Epifaunal Substrate and Available Cover</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>HB3. Stream Bottom Substrate</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB4. Pool Variability</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB5. Sediment Deposition and Scouring</td><td>7</td><td>7</td><td>7</td></tr>
<tr><td>HB6. Channel Flow Status</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB7. Channel Alteration</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>HB8. Channel Sinuosity</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>HB9. Bank Stability (e)</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>HB10. Vegetative Protection (e)</td><td>2</td><td>6</td><td>9</td><td colspan="2" rowspan="9">Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.</td></tr>
<tr><td>HB11. Riparian Zone (e)</td><td>5</td><td>7</td><td>9</td></tr>
<tr><td>HB12. Riparian Habitat Condition</td><td>2</td><td>5</td><td>7</td></tr>
<tr><td>Habitat Subtotal</td><td>52</td><td>62</td><td>70</td></tr>
<tr><td>Habitat FCI = Subtotal / 120</td><td>0.43</td><td>0.52</td><td>0.58</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI</td><td>1.41</td><td>1.61</td><td>1.78</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>TOTAL FCU = SAR Length (652) X Multiplication Factor (0.00125) X Total FCI</td><td>1.15</td><td>1.31</td><td>1.45</td></tr>
</table>

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 295	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.34**	**1.52**		
	TOTAL FCU = SAR Length (295) X Multiplication Factor (0.00125) X Total FCI	**0.42**	**0.49**	**0.56**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	6	7		
	H2b. Channel Capacity to Flow Frequency	4	5	7		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBB-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	4	5	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 129	Hydrologic Subtotal	27	29	35		
	Hydrologic FCI = Subtotal / 100	**0.27**	**0.29**	**0.35**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	7	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	39	43	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.54**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	2		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	7	8	9		
	HB12. Riparian Habitat Condition	6	6	7		
	Habitat Subtotal	43	49	56		
	Habitat FCI = Subtotal / 120	**0.36**	**0.41**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.24**	**1.42**		
	TOTAL FCU = SAR Length (129) X Multiplication Factor (0.00125) X Total FCI	**0.18**	**0.20**	**0.23**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB1-A4-TRIBB-(2a)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
AX-S2-TRIB1-A4-TRIBB-(2)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
141	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-17	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (141) X Multiplication Factor (0.00125) X Total FCI	**0.20**	**0.24**	**0.27**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBB-(2b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBB-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 466	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14, A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (466) X Multiplication Factor (0.00125) X Total FCI	**0.68**	**0.79**	**0.90**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBB-(2c)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBB-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 592	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.37**	**1.55**		
	TOTAL FCU = SAR Length (592) X Multiplication Factor (0.00125) X Total FCI	**0.87**	**1.01**	**1.15**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBB-AA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	7
	H2b. Channel Capacity to Flow Frequency	5	6	7
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBB-AA-(1)	H2c. Channel Bank Stability *(e)*	7	7	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	5	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 206	Hydrologic Subtotal	31	33	37
	Hydrologic FCI = Subtotal / 100	**0.31**	**0.33**	**0.37**
	WQ1a. Bank Stability *(e)*	7	7	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	7	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	41	44	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.51**	**0.55**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: A-14	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	7	7	7
	HB10. Vegetative Protection *(e)*	5	7	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	7	7	7
	Habitat Subtotal	48	53	59
	Habitat FCI = Subtotal / 120	**0.40**	**0.44**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.22**	**1.32**	**1.46**
	TOTAL FCU = SAR Length (206) X Multiplication Factor (0.00125) X Total FCI	**0.31**	**0.34**	**0.38**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBB-AB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	6	7		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBB-AB-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 226	Hydrologic Subtotal	34	34	37		
	Hydrologic FCI = Subtotal / 100	**0.34**	**0.34**	**0.37**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	7	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	40	42	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.50**	**0.53**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-14, A-17	HB2. Epifaunal Substrate and Available Cover	2	3	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	6	7	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	7	7	7		
	Habitat Subtotal	47	51	58		
	Habitat FCI = Subtotal / 120	**0.39**	**0.43**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.23**	**1.30**	**1.44**		
	TOTAL FCU = SAR Length (226) X Multiplication Factor (0.00125) X Total FCI	**0.35**	**0.37**	**0.41**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB1-A4-TRIBB-AC-(1)	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	6	7	7
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	7	7	7
AX-S2-TRIB1-A4-TRIBB-AC-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	6	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	32	34	37
141	**Hydrologic FCI = Subtotal / 100**	**0.32**	**0.34**	**0.37**
	WQ1a. Bank Stability *(e)*	7	7	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	7	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	41	44	48
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.51**	**0.55**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3
A-17	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	2	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	7	7	7
	HB10. Vegetative Protection *(e)*	5	7	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	7	7	7
	Habitat Subtotal	49	53	59
	Habitat FCI = Subtotal / 120	**0.41**	**0.44**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.24**	**1.33**	**1.46**
	TOTAL FCU = SAR Length (141) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.23**	**0.26**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBC-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	7	7		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBC-(1)	H2c. Channel Bank Stability *(e)*	6	7	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 172	Hydrologic Subtotal	33	35	36		
	Hydrologic FCI = Subtotal / 100	**0.33**	**0.35**	**0.36**		
	WQ1a. Bank Stability *(e)*	6	7	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	1	2	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	7		
	HB10. Vegetative Protection *(e)*	5	7	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	35	45	56		
	Habitat FCI = Subtotal / 120	**0.29**	**0.38**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.03**	**1.23**	**1.42**		
	TOTAL FCU = SAR Length (172) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.26**	**0.31**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBC-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBC-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 112	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.50**
	TOTAL FCU = SAR Length (112) X Multiplication Factor (0.00125) X Total FCI	**0.16**	**0.18**	**0.21**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBD-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB1-A4-TRIBD-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 257	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.51**		
	TOTAL FCU = SAR Length (257) X Multiplication Factor (0.00125) X Total FCI	**0.37**	**0.43**	**0.49**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB1-A4-TRIBE-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 221	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**		
	TOTAL FCU = SAR Length (221) X Multiplication Factor (0.00125) X Total FCI	**0.31**	**0.36**	**0.41**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB1-A5-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
AX-S2-TRIB1-A5-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
254	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-14	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.34**	**1.53**
	TOTAL FCU = SAR Length (254) X Multiplication Factor (0.00125) X Total FCI	**0.36**	**0.43**	**0.49**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-A6-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	4	5	7
Baseline SAR Name(s): AX-S2-TRIB1-A6-(1)	H2c. Channel Bank Stability *(e)*	6	7	7
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	4	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 439	Hydrologic Subtotal	28	32	38
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.32**	**0.38**
	WQ1a. Bank Stability *(e)*	6	7	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	37	41	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.46**	**0.51**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	1	2	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	3	4
	HB5. Sediment Deposition and Scouring	5	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	7
	HB10. Vegetative Protection *(e)*	6	7	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	6	6	7
	Habitat Subtotal	46	52	61
	Habitat FCI = Subtotal / 120	**0.38**	**0.43**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.26**	**1.48**
	TOTAL FCU = SAR Length (439) X Multiplication Factor (0.00125) X Total FCI	**0.61**	**0.69**	**0.81**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-A7-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB1-A7-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 359	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (359) X Multiplication Factor (0.00125) X Total FCI	**0.49**	**0.59**	**0.67**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB1-A7-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB1-A7-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 154	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-17	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**
	TOTAL FCU = SAR Length (154) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.26**	**0.30**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB2-B2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	7	7	7
Baseline SAR Name(s): AX-S2-TRIB2-B2-(1)	H2c. Channel Bank Stability *(e)*	3	5	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 355	Hydrologic Subtotal	29	32	37
	Hydrologic FCI = Subtotal / 100	**0.29**	**0.32**	**0.37**
	WQ1a. Bank Stability *(e)*	3	5	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	34	39	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.49**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	6	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	3	5	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	40	48	59
	Habitat FCI = Subtotal / 120	**0.33**	**0.40**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.05**	**1.21**	**1.45**
	TOTAL FCU = SAR Length (355) X Multiplication Factor (0.00125) X Total FCI	**0.47**	**0.54**	**0.64**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
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- Use of large woody debris (LWD) or other native material for in-channel structures
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RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB2-B2-TRIBA-(1)	H2a. Channel Condition/ Alteration	3	4	6
	H2b. Channel Capacity to Flow Frequency	2	4	6
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	3	4	6
AX-S2-TRIB2-B2-TRIBA-(1)	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	2	4	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	17	23	33
384	**Hydrologic FCI = Subtotal / 100**	**0.17**	**0.23**	**0.33**
	WQ1a. Bank Stability *(e)*	3	4	6
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	37	46
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.46**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	4
A-16	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	4	3	4
	HB5. Sediment Deposition and Scouring	6	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	3	4	6
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	42	47	59
	Habitat FCI = Subtotal / 120	**0.35**	**0.39**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.93**	**1.08**	**1.40**
	TOTAL FCU = SAR Length (384) X Multiplication Factor (0.00125) X Total FCI	**0.45**	**0.52**	**0.67**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
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(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	2	4	7
Baseline SAR Name(s): AX-S2-TRIB3-(1)	H2c. Channel Bank Stability *(e)*	4	5	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	2	4	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 211	Hydrologic Subtotal	19	25	36
	Hydrologic FCI = Subtotal / 100	**0.19**	**0.25**	**0.36**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	37	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	3	4
	HB5. Sediment Deposition and Scouring	4	5	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	4	5	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	6	7	7
	Habitat Subtotal	39	47	59
	Habitat FCI = Subtotal / 120	**0.33**	**0.39**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.91**	**1.10**	**1.44**
	TOTAL FCU = SAR Length (211) X Multiplication Factor (0.00125) X Total FCI	**0.24**	**0.29**	**0.38**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB3-(2a)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
AX-S2-TRIB3-(2)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	4	4	4
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	41	42	44
804	**Hydrologic FCI = Subtotal / 100**	**0.41**	**0.42**	**0.44**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-15	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.20**	**1.39**	**1.57**
	TOTAL FCU = SAR Length (804) X Multiplication Factor (0.00125) X Total FCI	**1.21**	**1.40**	**1.58**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-(2b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	7	7	7		
	H3b. Bottom Substrate Composition	4	4	4		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,036	Hydrologic Subtotal	44	45	47		
	Hydrologic FCI = Subtotal / 100	**0.44**	**0.45**	**0.47**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.23**	**1.42**	**1.60**		
	TOTAL FCU = SAR Length (1036) X Multiplication Factor (0.00125) X Total FCI	**1.59**	**1.84**	**2.07**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	3	5	7		
Baseline SAR Name(s): AX-S2-TRIB3-A7-(1)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	4	5	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 139	Hydrologic Subtotal	25	30	37		
	Hydrologic FCI = Subtotal / 100	**0.25**	**0.30**	**0.37**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	4	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	38	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.48**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	3	3	4		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	4	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	6	7	9		
	HB11. Riparian Zone *(e)*	4	6	9		
	HB12. Riparian Habitat Condition	6	6	7		
	Habitat Subtotal	42	49	61		
	Habitat FCI = Subtotal / 120	**0.35**	**0.41**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.99**	**1.19**	**1.48**		
	TOTAL FCU = SAR Length (139) X Multiplication Factor (0.00125) X Total FCI	**0.17**	**0.21**	**0.26**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A7-(2a)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A7-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 242	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.37**	**1.55**
	TOTAL FCU = SAR Length (242) X Multiplication Factor (0.00125) X Total FCI	**0.36**	**0.41**	**0.47**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-(2b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A7-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 321	Hydrologic Subtotal	42	43	45		
	Hydrologic FCI = Subtotal / 100	**0.42**	**0.43**	**0.45**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.20**	**1.39**	**1.57**		
	TOTAL FCU = SAR Length (321) X Multiplication Factor (0.00125) X Total FCI	**0.48**	**0.56**	**0.63**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A7-(2c)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A7-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 176	Hydrologic Subtotal	41	42	44
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.19**	**1.38**	**1.56**
	TOTAL FCU = SAR Length (176) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.30**	**0.34**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

<table>
<tr><th>STREAM ASSESSMENT REACH (SAR) INFORMATION</th><th>SWAMPIM METRICS (a, b, c, d)</th><th>END OF CONSTRUCTION</th><th>END OF MONITORING</th><th>AT MATURITY</th><th>MITIGATION ACTIVITIES / WORK PERFORMED</th><th>RATIONALE FOR LIFT</th></tr>
<tr><td rowspan="3">Proposed SAR Name:
AX-S2-TRIB3-A7-(3)</td><td>H1. Flow Regime and Groundwater Interaction</td><td>1</td><td>1</td><td>1</td><td rowspan="30">- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management</td><td rowspan="30">- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity</td></tr>
<tr><td>H2a. Channel Condition/ Alteration</td><td>6</td><td>6</td><td>7</td></tr>
<tr><td>H2b. Channel Capacity to Flow Frequency</td><td>4</td><td>5</td><td>7</td></tr>
<tr><td rowspan="7">Baseline SAR Name(s):
AX-S2-TRIB3-A7-(3)</td><td>H2c. Channel Bank Stability (e)</td><td>6</td><td>6</td><td>7</td></tr>
<tr><td>H3a. Channel Sinuosity</td><td>7</td><td>7</td><td>7</td></tr>
<tr><td>H3b. Bottom Substrate Composition</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>H3c. In stream Bottom Topography OR Manning’s n (f)</td><td>4</td><td>4</td><td>5</td></tr>
<tr><td>H3d. Channel Incision</td><td>4</td><td>5</td><td>7</td></tr>
<tr><td>H4a. Pools</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>H4b. Channel Flow Status</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td rowspan="3">Proposed SAR Length (LF):
564</td><td>Hydrologic Subtotal</td><td>36</td><td>38</td><td>45</td></tr>
<tr><td>Hydrologic FCI = Subtotal / 100</td><td>0.36</td><td>0.38</td><td>0.45</td></tr>
<tr><td>WQ1a. Bank Stability (e)</td><td>6</td><td>6</td><td>7</td></tr>
<tr><td>Mitigation Zone:
Zone A</td><td>WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition (e, g)</td><td>7</td><td>7</td><td>7</td></tr>
<tr><td rowspan="2">Stream Classification
Ephemeral</td><td>WQ2. Water Clarity</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation (h)</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td rowspan="4">Multiplication Factor (i) :
0.00125</td><td>WQ4. Composition of Organic Matter</td><td>5</td><td>5</td><td>6</td></tr>
<tr><td>WQ5. Land Use Pattern Beyond Immediate Riparian Zone (e)</td><td>5</td><td>7</td><td>9</td></tr>
<tr><td>WQ6a. Riparian Zone Width (from stream edge to field) (e)</td><td>8</td><td>8</td><td>9</td></tr>
<tr><td>WQ6b. Riparian Zone Vegetation Protection/Completeness (e)</td><td>6</td><td>7</td><td>9</td></tr>
<tr><td rowspan="3">Mitigation Design Type:
Enhancement</td><td>Water Quality / Biogeochemical Subtotal</td><td>37</td><td>40</td><td>47</td></tr>
<tr><td>Water Quality / Biogeochemical FCI = Subtotal / 80</td><td>0.46</td><td>0.50</td><td>0.59</td></tr>
<tr><td>HB1. Flow Regime</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td rowspan="15">Reference Figure:
A-16</td><td>HB2. Epifaunal Substrate and Available Cover</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB3. Stream Bottom Substrate</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB4. Pool Variability</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB5. Sediment Deposition and Scouring</td><td>6</td><td>6</td><td>7</td></tr>
<tr><td>HB6. Channel Flow Status</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>HB7. Channel Alteration</td><td>6</td><td>7</td><td>7</td></tr>
<tr><td>HB8. Channel Sinuosity</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB9. Bank Stability (e)</td><td>6</td><td>6</td><td>7</td></tr>
<tr><td>HB10. Vegetative Protection (e)</td><td>6</td><td>7</td><td>9</td><td colspan="2" rowspan="8">Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
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(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.</td></tr>
<tr><td>HB11. Riparian Zone (e)</td><td>8</td><td>8</td><td>9</td></tr>
<tr><td>HB12. Riparian Habitat Condition</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>Habitat Subtotal</td><td>57</td><td>59</td><td>64</td></tr>
<tr><td>Habitat FCI = Subtotal / 120</td><td>0.48</td><td>0.49</td><td>0.53</td></tr>
<tr><td>TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI</td><td>1.30</td><td>1.37</td><td>1.57</td></tr>
<tr><td>TOTAL FCU = SAR Length (564) X Multiplication Factor (0.00125) X Total FCI</td><td>0.92</td><td>0.97</td><td>1.11</td></tr>
</table>

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-(4)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 555	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	5	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	34	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15, A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.21**	**1.38**	**1.56**		
	TOTAL FCU = SAR Length (555) X Multiplication Factor (0.00125) X Total FCI	**0.84**	**0.96**	**1.08**		

Notes:
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STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 401	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**
	TOTAL FCU = SAR Length (401) X Multiplication Factor (0.00125) X Total FCI	**0.56**	**0.66**	**0.74**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
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STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBA-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	7	7	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBA-(2)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	4	4	4		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 233	Hydrologic Subtotal	37	37	41		
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.37**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	38	41	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.51**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	4	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	6	7	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	7	7	7		
	Habitat Subtotal	48	52	60		
	Habitat FCI = Subtotal / 120	**0.40**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.25**	**1.31**	**1.50**		
	TOTAL FCU = SAR Length (233) X Multiplication Factor (0.00125) X Total FCI	**0.36**	**0.38**	**0.44**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBA-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBA-(3)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 97	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.30**	**1.48**
	TOTAL FCU = SAR Length (97) X Multiplication Factor (0.00125) X Total FCI	**0.13**	**0.16**	**0.18**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBA-(4)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 457	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.38**	**1.57**		
	TOTAL FCU = SAR Length (457) X Multiplication Factor (0.00125) X Total FCI	**0.67**	**0.79**	**0.90**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB3-A7-TRIBA-AA-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
AX-S2-TRIB3-A7-TRIBA-AA-(1)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39
122	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*:	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-15	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**
	TOTAL FCU = SAR Length (122) X Multiplication Factor (0.00125) X Total FCI	**0.17**	**0.20**	**0.23**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB3-A7-TRIBA-AB-(1)	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	7	7	7
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	5	6	7
AX-S2-TRIB3-A7-TRIBA-AB-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	32	34	37
168	**Hydrologic FCI = Subtotal / 100**	**0.32**	**0.34**	**0.37**
	WQ1a. Bank Stability *(e)*	5	6	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	39	47
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.49**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3
A-15	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	2	3
	HB5. Sediment Deposition and Scouring	4	5	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	4	5	6
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	5	6	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	6	6	7
	Habitat Subtotal	41	47	58
	Habitat FCI = Subtotal / 120	**0.34**	**0.39**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.07**	**1.22**	**1.44**
	TOTAL FCU = SAR Length (168) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.26**	**0.30**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
AX-S2-TRIB3-A7-TRIBA-AC-(1)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
AX-S2-TRIB3-A7-TRIBA-AC-(1)	H3a. Channel Sinuosity	2	2	2		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	37	38	40		
79	**Hydrologic FCI = Subtotal / 100**	**0.37**	**0.38**	**0.40**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
A-15	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	2	2	2		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.32**	**1.50**		
	TOTAL FCU = SAR Length (79) X Multiplication Factor (0.00125) X Total FCI	**0.11**	**0.13**	**0.15**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
AX-S2-TRIB3-A7-TRIBA-AD-(1)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
AX-S2-TRIB3-A7-TRIBA-AD-(1)	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39		
86	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
A-15	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**		
	TOTAL FCU = SAR Length (86) X Multiplication Factor (0.00125) X Total FCI	**0.12**	**0.14**	**0.16**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBB-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 290	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (290) X Multiplication Factor (0.00125) X Total FCI	**0.42**	**0.49**	**0.55**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
AX-S2-TRIB3-A7-TRIBB-(2)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
N/A	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42		
134	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49		
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
A-16	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (134) X Multiplication Factor (0.00125) X Total FCI	**0.19**	**0.23**	**0.26**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
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(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB3-A7-TRIBB-AA-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
AX-S2-TRIB3-A7-TRIBB-AA-(1)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	37	38	40
275	**Hydrologic FCI = Subtotal / 100**	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
A-16	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.32**	**1.49**
	TOTAL FCU = SAR Length (275) X Multiplication Factor (0.00125) X Total FCI	**0.39**	**0.45**	**0.51**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBC-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBC-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 179	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15, A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (179) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.30**	**0.34**		

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(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBD-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	2	4	6		
	H2b. Channel Capacity to Flow Frequency	2	4	6		
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBD-(1)	H2c. Channel Bank Stability *(e)*	2	4	6		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	2	4	6		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 284	Hydrologic Subtotal	16	24	33		
	Hydrologic FCI = Subtotal / 100	**0.16**	**0.24**	**0.33**		
	WQ1a. Bank Stability *(e)*	2	4	6		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	2	4	6		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	24	34	45		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.30**	**0.43**	**0.56**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	1	2	2		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	2		
	HB5. Sediment Deposition and Scouring	1	3	5		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	6		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	2	4	6		
	HB10. Vegetative Protection *(e)*	2	5	9		
	HB11. Riparian Zone *(e)*	7	8	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	27	40	53		
	Habitat FCI = Subtotal / 120	**0.23**	**0.33**	**0.44**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.69**	**1.00**	**1.33**		
	TOTAL FCU = SAR Length (284) X Multiplication Factor (0.00125) X Total FCI	**0.24**	**0.36**	**0.47**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB3-A7-TRIBD-AA-(1)	H2a. Channel Condition/ Alteration	2	4	6
	H2b. Channel Capacity to Flow Frequency	2	4	6
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	2	4	6
AX-S2-TRIB3-A7-TRIBD-AA-(1)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	2	4	6
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	14	22	31
69	**Hydrologic FCI = Subtotal / 100**	**0.14**	**0.22**	**0.31**
	WQ1a. Bank Stability *(e)*	2	4	6
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	2	4	6
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	5	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	25	34	45
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.31**	**0.43**	**0.56**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	2	3	3
A-16	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	2
	HB5. Sediment Deposition and Scouring	1	3	5
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	2	4	6
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	2	4	6
	HB10. Vegetative Protection *(e)*	2	5	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	4	5	7
	Habitat Subtotal	27	39	52
	Habitat FCI = Subtotal / 120	**0.23**	**0.33**	**0.43**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.68**	**0.98**	**1.30**
	TOTAL FCU = SAR Length (69) X Multiplication Factor (0.00125) X Total FCI	**0.06**	**0.08**	**0.11**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBE-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBE-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 895	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (895) X Multiplication Factor (0.00125) X Total FCI	**1.30**	**1.51**	**1.71**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBF-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBF-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 94	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**		
	TOTAL FCU = SAR Length (94) X Multiplication Factor (0.00125) X Total FCI	**0.13**	**0.15**	**0.17**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A7-TRIBG-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A7-TRIBG-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 142	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: A-16	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.32**	**1.50**
	TOTAL FCU = SAR Length (142) X Multiplication Factor (0.00125) X Total FCI	**0.20**	**0.23**	**0.27**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A10-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	4	5	7
Baseline SAR Name(s): AX-S2-TRIB3-A10-(1)	H2c. Channel Bank Stability *(e)*	4	5	7
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	4	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 218	Hydrologic Subtotal	26	30	39
	Hydrologic FCI = Subtotal / 100	**0.26**	**0.30**	**0.39**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	37	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	4
	HB5. Sediment Deposition and Scouring	4	5	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	4	5	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	6	6	7
	Habitat Subtotal	40	47	61
	Habitat FCI = Subtotal / 120	**0.33**	**0.39**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.98**	**1.15**	**1.49**
	TOTAL FCU = SAR Length (218) X Multiplication Factor (0.00125) X Total FCI	**0.27**	**0.31**	**0.41**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A10-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A10-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 235	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**		
	TOTAL FCU = SAR Length (235) X Multiplication Factor (0.00125) X Total FCI	**0.34**	**0.40**	**0.46**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A10-B1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A10-B1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 70	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (70) X Multiplication Factor (0.00125) X Total FCI	**0.10**	**0.12**	**0.13**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A10-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A10-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 289	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (289) X Multiplication Factor (0.00125) X Total FCI	**0.42**	**0.49**	**0.55**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A11-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	7
	H2b. Channel Capacity to Flow Frequency	4	5	7
Baseline SAR Name(s): AX-S2-TRIB3-A11-(1)	H2c. Channel Bank Stability *(e)*	5	6	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	4	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 429	Hydrologic Subtotal	27	30	37
	Hydrologic FCI = Subtotal / 100	**0.27**	**0.30**	**0.37**
	WQ1a. Bank Stability *(e)*	5	6	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	3	3
	HB5. Sediment Deposition and Scouring	5	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	5	6	7
	HB10. Vegetative Protection *(e)*	3	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	41	50	60
	Habitat FCI = Subtotal / 120	**0.34**	**0.42**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.02**	**1.22**	**1.46**
	TOTAL FCU = SAR Length (429) X Multiplication Factor (0.00125) X Total FCI	**0.55**	**0.65**	**0.78**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A12-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	3	5	7		
Baseline SAR Name(s): AX-S2-TRIB3-A12-(1)	H2c. Channel Bank Stability *(e)*	4	5	7		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	3	5	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 163	Hydrologic Subtotal	24	30	38		
	Hydrologic FCI = Subtotal / 100	**0.24**	**0.30**	**0.38**		
	WQ1a. Bank Stability *(e)*	4	5	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	38	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	4	5	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	40	48	59		
	Habitat FCI = Subtotal / 120	**0.33**	**0.40**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.97**	**1.18**	**1.46**		
	TOTAL FCU = SAR Length (163) X Multiplication Factor (0.00125) X Total FCI	**0.20**	**0.24**	**0.30**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A13-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	5	6	7		
Baseline SAR Name(s): AX-S2-TRIB3-A13-(1)	H2c. Channel Bank Stability *(e)*	4	5	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	5	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 255	Hydrologic Subtotal	27	31	38		
	Hydrologic FCI = Subtotal / 100	**0.27**	**0.31**	**0.38**		
	WQ1a. Bank Stability *(e)*	4	5	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	37	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.46**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	5	5		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	4	5	6		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	4	5	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	6	6	7		
	Habitat Subtotal	40	46	56		
	Habitat FCI = Subtotal / 120	**0.33**	**0.38**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.99**	**1.15**	**1.44**		
	TOTAL FCU = SAR Length (255) X Multiplication Factor (0.00125) X Total FCI	**0.32**	**0.37**	**0.46**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
AX-S2-TRIB3-A13-(2)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
AX-S2-TRIB3-A13-(2)	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42		
244	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
A-15	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (244) X Multiplication Factor (0.00125) X Total FCI	**0.35**	**0.41**	**0.47**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A14-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s): AX-S2-TRIB3-A14-(1)	H2c. Channel Bank Stability *(e)*	4	5	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	6	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 144	Hydrologic Subtotal	29	31	37
	Hydrologic FCI = Subtotal / 100	**0.29**	**0.31**	**0.37**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	38	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.48**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	5	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	40	48	59
	Habitat FCI = Subtotal / 120	**0.33**	**0.40**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.02**	**1.19**	**1.45**
	TOTAL FCU = SAR Length (144) X Multiplication Factor (0.00125) X Total FCI	**0.18**	**0.21**	**0.26**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A14-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A14-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 345	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**		
	TOTAL FCU = SAR Length (345) X Multiplication Factor (0.00125) X Total FCI	**0.50**	**0.59**	**0.67**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
AX-S2-TRIB3-A15-(1)	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	4	5	7		
AX-S2-TRIB3-A15-(1)	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	31	33	37		
93	**Hydrologic FCI = Subtotal / 100**	**0.31**	**0.33**	**0.37**		
	WQ1a. Bank Stability *(e)*	4	5	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	38	47		
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	2	3	4		
A-15	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	4		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	4	5	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	41	49	61		
	Habitat FCI = Subtotal / 120	**0.34**	**0.41**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.05**	**1.22**	**1.47**		
	TOTAL FCU = SAR Length (93) X Multiplication Factor (0.00125) X Total FCI	**0.12**	**0.14**	**0.17**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A16-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	2	4	6		
Baseline SAR Name(s): AX-S2-TRIB3-A16-(1)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	2	4	6		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 157	Hydrologic Subtotal	21	27	35		
	Hydrologic FCI = Subtotal / 100	**0.21**	**0.27**	**0.35**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	30	37	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.38**	**0.46**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	1	2	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	4	5	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	6		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	35	45	58		
	Habitat FCI = Subtotal / 120	**0.29**	**0.38**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.88**	**1.11**	**1.42**		
	TOTAL FCU = SAR Length (157) X Multiplication Factor (0.00125) X Total FCI	**0.17**	**0.22**	**0.28**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A16-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A16-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 327	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (327) X Multiplication Factor (0.00125) X Total FCI	**0.47**	**0.55**	**0.63**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A17-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A17-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 224	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.34**	**1.53**		
	TOTAL FCU = SAR Length (224) X Multiplication Factor (0.00125) X Total FCI	**0.32**	**0.38**	**0.43**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A18-(0)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 276	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	5	5
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	30	39	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.38**	**0.49**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (276) X Multiplication Factor (0.00125) X Total FCI	**0.40**	**0.47**	**0.53**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
AX-S2-TRIB3-A18-(1)	H2a. Channel Condition/ Alteration	3	5	7
	H2b. Channel Capacity to Flow Frequency	2	4	7
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	3	5	7
AX-S2-TRIB3-A18-(1)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	2	4	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	17	25	36
103	**Hydrologic FCI = Subtotal / 100**	**0.17**	**0.25**	**0.36**
	WQ1a. Bank Stability *(e)*	3	5	7
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	30	37	47
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.38**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3
A-15	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	4	5	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	4	5	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	3	5	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	35	44	57
	Habitat FCI = Subtotal / 120	**0.29**	**0.37**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.84**	**1.08**	**1.43**
	TOTAL FCU = SAR Length (103) X Multiplication Factor (0.00125) X Total FCI	**0.11**	**0.14**	**0.18**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: AX-S2-TRIB3-A19-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): AX-S2-TRIB3-A19-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 232	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (232) X Multiplication Factor (0.00125) X Total FCI	**0.33**	**0.39**	**0.45**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: AX-S2-TRIB3-A20-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): AX-S2-TRIB3-A20-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 205	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone A	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: A-15	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (205) X Multiplication Factor (0.00125) X Total FCI	**0.30**	**0.35**	**0.39**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	5	6	7
Baseline SAR Name(s): S15-TRIB3-(1)	H2c. Channel Bank Stability *(e)*	5	6	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 76	Hydrologic Subtotal	31	34	39
	Hydrologic FCI = Subtotal / 100	**0.31**	**0.34**	**0.39**
	WQ1a. Bank Stability *(e)*	5	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	39	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.49**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	6	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	5	6	7
	HB10. Vegetative Protection *(e)*	3	6	9
	HB11. Riparian Zone *(e)*	7	8	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	40	50	61
	Habitat FCI = Subtotal / 120	**0.33**	**0.42**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.03**	**1.24**	**1.49**
	TOTAL FCU = SAR Length (76) X Multiplication Factor (0.00125) X Total FCI	**0.10**	**0.12**	**0.14**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-(2a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	3	5	7		
	H2b. Channel Capacity to Flow Frequency	2	4	6		
Baseline SAR Name(s): S15-TRIB3-(2)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 736	Hydrologic Subtotal	28	33	39		
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.33**	**0.39**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	39	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.49**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	2	3	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	39	49	60		
	Habitat FCI = Subtotal / 120	**0.33**	**0.41**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.02**	**1.23**	**1.48**		
	TOTAL FCU = SAR Length (736) X Multiplication Factor (0.00125) X Total FCI	**0.94**	**1.13**	**1.36**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-(2b)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	3	5	7
	H2b. Channel Capacity to Flow Frequency	2	4	6
Baseline SAR Name(s): S15-TRIB3-(2)	H2c. Channel Bank Stability *(e)*	5	6	7
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 226	Hydrologic Subtotal	28	33	39
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.33**	**0.39**
	WQ1a. Bank Stability *(e)*	5	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	39	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.49**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	3	4
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	3	5	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	5	6	7
	HB10. Vegetative Protection *(e)*	3	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	39	49	60
	Habitat FCI = Subtotal / 120	**0.33**	**0.41**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.02**	**1.23**	**1.48**
	TOTAL FCU = SAR Length (226) X Multiplication Factor (0.00125) X Total FCI	**0.29**	**0.35**	**0.42**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S15-TRIB3-(3)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 476	Hydrologic Subtotal	50	51	53
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.61**	**1.80**
	TOTAL FCU = SAR Length (476) X Multiplication Factor (0.00125) X Total FCI	**0.84**	**0.96**	**1.07**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S15-TRIB3-(4)	H2a. Channel Condition/ Alteration	3	5	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	4	5	7		
S15-TRIB3-(4)	H3a. Channel Sinuosity	8	8	8		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	4	5	7		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	41	45	53		
1,115	**Hydrologic FCI = Subtotal / 100**	**0.41**	**0.45**	**0.53**		
	WQ1a. Bank Stability *(e)*	4	5	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7		
Stream Classification:	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	7	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	40	46	55		
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.50**	**0.58**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	3	3	4		
B-1	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	3	5	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	4	4	4		
	HB9. Bank Stability *(e)*	4	5	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	45	54	66		
	Habitat FCI = Subtotal / 120	**0.38**	**0.45**	**0.55**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.29**	**1.48**	**1.77**		
	TOTAL FCU = SAR Length (1115) X Multiplication Factor (0.00125) X Total FCI	**1.80**	**2.06**	**2.47**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 211	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.51**		
	TOTAL FCU = SAR Length (211) X Multiplication Factor (0.00125) X Total FCI	**0.30**	**0.35**	**0.40**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	3	5	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S15-TRIB3-A1-(2)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	8	8	8		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 809	Hydrologic Subtotal	36	39	43		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.39**	**0.43**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	38	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	2	3	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	4	4	4		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	37	48	61		
	Habitat FCI = Subtotal / 120	**0.31**	**0.40**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.07**	**1.27**	**1.53**		
	TOTAL FCU = SAR Length (809) X Multiplication Factor (0.00125) X Total FCI	**1.08**	**1.28**	**1.55**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A1-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A1-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 149	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.79**		
	TOTAL FCU = SAR Length (149) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.30**	**0.33**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A1-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S15-TRIB3-A1-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 159	Hydrologic Subtotal	33	34	38		
	Hydrologic FCI = Subtotal / 100	**0.33**	**0.34**	**0.38**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	35	39	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.44**	**0.49**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	2	3	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	4	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	5	7	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	40	48	59		
	Habitat FCI = Subtotal / 120	**0.33**	**0.40**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.23**	**1.46**		
	TOTAL FCU = SAR Length (159) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.24**	**0.29**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-A2-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	3	5	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s): S15-TRIB3-A2-(1)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	6	6	7
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 567	Hydrologic Subtotal	40	42	48
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.42**	**0.48**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	2	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	5	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	35	43	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.44**	**0.54**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	2	4	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	2	4	6
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	2	5	9
	HB11. Riparian Zone *(e)*	2	5	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	32	46	64
	Habitat FCI = Subtotal / 120	**0.27**	**0.38**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.34**	**1.70**
	TOTAL FCU = SAR Length (567) X Multiplication Factor (0.00125) X Total FCI	**0.78**	**0.95**	**1.20**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S15-TRIB3-A3-(1)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 182	Hydrologic Subtotal	30	32	35		
	Hydrologic FCI = Subtotal / 100	**0.30**	**0.32**	**0.35**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	3	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	27	37	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.34**	**0.46**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	3	6	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	33	45	58		
	Habitat FCI = Subtotal / 120	**0.28**	**0.38**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.91**	**1.16**	**1.42**		
	TOTAL FCU = SAR Length (182) X Multiplication Factor (0.00125) X Total FCI	**0.21**	**0.26**	**0.32**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A3-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 429	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**		
	TOTAL FCU = SAR Length (429) X Multiplication Factor (0.00125) X Total FCI	**0.62**	**0.73**	**0.83**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-A3-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s): S15-TRIB3-A3-(3)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 354	Hydrologic Subtotal	29	30	35
	Hydrologic FCI = Subtotal / 100	**0.29**	**0.30**	**0.35**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	35	39	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.44**	**0.49**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	4	5	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	3	5	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	5	7	9
	HB11. Riparian Zone *(e)*	6	7	9
	HB12. Riparian Habitat Condition	4	5	7
	Habitat Subtotal	35	44	57
	Habitat FCI = Subtotal / 120	**0.29**	**0.37**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.02**	**1.15**	**1.41**
	TOTAL FCU = SAR Length (354) X Multiplication Factor (0.00125) X Total FCI	**0.45**	**0.51**	**0.62**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A3-(4)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): S15-TRIB3-A3-(4)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 317	Hydrologic Subtotal	40	41	48		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.48**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	43	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.54**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	1	2	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	4		
	HB5. Sediment Deposition and Scouring	4	5	6		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	3	4	6		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	5	7	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	42	50	64		
	Habitat FCI = Subtotal / 120	**0.35**	**0.42**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.29**	**1.41**	**1.70**		
	TOTAL FCU = SAR Length (317) X Multiplication Factor (0.00125) X Total FCI	**0.51**	**0.56**	**0.67**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A3-(5)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A3-(5)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 385	Hydrologic Subtotal	50	51	53		
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.61**	**1.80**		
	TOTAL FCU = SAR Length (385) X Multiplication Factor (0.00125) X Total FCI	**0.68**	**0.77**	**0.87**		

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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-A3-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	4	5	7
Baseline SAR Name(s): S15-TRIB3-A3-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	5	6	7
	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 266	Hydrologic Subtotal	26	29	35
	Hydrologic FCI = Subtotal / 100	**0.26**	**0.29**	**0.35**
	WQ1a. Bank Stability *(e)*	5	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	5	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	2	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	8	8	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	38	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.48**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	5	5	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	5	6	7
	HB10. Vegetative Protection *(e)*	8	8	9
	HB11. Riparian Zone *(e)*	2	5	9
	HB12. Riparian Habitat Condition	1	4	7
	Habitat Subtotal	34	44	57
	Habitat FCI = Subtotal / 120	**0.28**	**0.37**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.96**	**1.13**	**1.41**
	TOTAL FCU = SAR Length (266) X Multiplication Factor (0.00125) X Total FCI	**0.32**	**0.38**	**0.47**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
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(c) FCI = Functional Condition Index.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A3-TRIBB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	3	5	7		
Baseline SAR Name(s): S15-TRIB3-A3-TRIBB-(1)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	7	7	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 59	Hydrologic Subtotal	25	29	35		
	Hydrologic FCI = Subtotal / 100	**0.25**	**0.29**	**0.35**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	7	8	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	34	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	2	2	2		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	3	4	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	7	8	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	32	42	55		
	Habitat FCI = Subtotal / 120	**0.27**	**0.35**	**0.46**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.94**	**1.14**	**1.40**		
	TOTAL FCU = SAR Length (59) X Multiplication Factor (0.00125) X Total FCI	**0.07**	**0.08**	**0.10**		

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STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S15-TRIB3-A3-TRIBB-(2)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39
311	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-1	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (311) X Multiplication Factor (0.00125) X Total FCI	**0.43**	**0.51**	**0.58**

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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A4-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A4-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 186	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**		
	TOTAL FCU = SAR Length (186) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.30**	**0.35**		

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(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S15-TRIB3-A5-(1a)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S15-TRIB3-A5-(1)	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39		
530	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
B-1	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.32**	**1.50**		
	TOTAL FCU = SAR Length (530) X Multiplication Factor (0.00125) X Total FCI	**0.74**	**0.87**	**0.99**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A5-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A5-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 538	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (538) X Multiplication Factor (0.00125) X Total FCI	**0.77**	**0.91**	**1.04**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A5-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A5-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 300	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**		
	TOTAL FCU = SAR Length (300) X Multiplication Factor (0.00125) X Total FCI	**0.41**	**0.49**	**0.56**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A6-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A6-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 830	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.52**		
	TOTAL FCU = SAR Length (830) X Multiplication Factor (0.00125) X Total FCI	**1.20**	**1.40**	**1.58**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A7-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	6	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): S15-TRIB3-A7-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 457	Hydrologic Subtotal	30	30	35		
	Hydrologic FCI = Subtotal / 100	**0.30**	**0.30**	**0.35**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	8	8	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	37	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.46**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	1	2	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	1	1	1		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	6	7	8		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	8	8	9		
	HB11. Riparian Zone *(e)*	1	5	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	32	43	56		
	Habitat FCI = Subtotal / 120	**0.27**	**0.36**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.97**	**1.12**	**1.40**		
	TOTAL FCU = SAR Length (457) X Multiplication Factor (0.00125) X Total FCI	**0.55**	**0.64**	**0.80**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S15-TRIB3-A8-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S15-TRIB3-A8-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 455	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-1, B-3	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.51**		
	TOTAL FCU = SAR Length (455) X Multiplication Factor (0.00125) X Total FCI	**0.65**	**0.76**	**0.86**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S15-TRIB3-A9-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S15-TRIB3-A9-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 126	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-1	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.34**	**1.53**
	TOTAL FCU = SAR Length (126) X Multiplication Factor (0.00125) X Total FCI	**0.18**	**0.21**	**0.24**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	7	7	7		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 912	Hydrologic Subtotal	53	54	56		
	Hydrologic FCI = Subtotal / 100	**0.53**	**0.54**	**0.56**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.44**	**1.64**	**1.83**		
	TOTAL FCU = SAR Length (912) X Multiplication Factor (0.00125) X Total FCI	**1.64**	**1.87**	**2.09**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-(2a)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,305	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.79**		
	TOTAL FCU = SAR Length (1305) X Multiplication Factor (0.00125) X Total FCI	**2.28**	**2.61**	**2.92**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-(2b)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 945	Hydrologic Subtotal	47	48	50		
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.48**	**0.50**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-5	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	50	60	68		
	Habitat FCI = Subtotal / 120	**0.42**	**0.50**	**0.57**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.36**	**1.57**	**1.75**		
	TOTAL FCU = SAR Length (945) X Multiplication Factor (0.00125) X Total FCI	**1.61**	**1.85**	**2.07**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	7	7	7		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 613	Hydrologic Subtotal	53	54	56		
	Hydrologic FCI = Subtotal / 100	**0.53**	**0.54**	**0.56**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	4	4	4		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.44**	**1.64**	**1.83**		
	TOTAL FCU = SAR Length (613) X Multiplication Factor (0.00125) X Total FCI	**1.10**	**1.26**	**1.40**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-(2)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	6	6	6		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 935	Hydrologic Subtotal	52	53	55		
	Hydrologic FCI = Subtotal / 100	**0.52**	**0.53**	**0.55**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.63**	**1.82**		
	TOTAL FCU = SAR Length (935) X Multiplication Factor (0.00125) X Total FCI	**1.67**	**1.91**	**2.13**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S16-TRIB7-(3)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
N/A	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	51	52	54		
1,429	**Hydrologic FCI = Subtotal / 100**	**0.51**	**0.52**	**0.54**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	38	47	55		
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5		
B-7	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.42**	**1.62**	**1.81**		
	TOTAL FCU = SAR Length (1429) X Multiplication Factor (0.00125) X Total FCI	**2.54**	**2.89**	**3.23**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-(4)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB7-(4)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 420	Hydrologic Subtotal	51	52	54
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.42**	**1.62**	**1.81**
	TOTAL FCU = SAR Length (420) X Multiplication Factor (0.00125) X Total FCI	**0.75**	**0.85**	**0.95**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S16-TRIB7-(5)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S16-TRIB7-(5)	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	49	50	52		
1,597	**Hydrologic FCI = Subtotal / 100**	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	38	47	55		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
B-4	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.79**		
	TOTAL FCU = SAR Length (1597) X Multiplication Factor (0.00125) X Total FCI	**2.79**	**3.19**	**3.57**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 588	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	40	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.30**	**1.47**
	TOTAL FCU = SAR Length (588) X Multiplication Factor (0.00125) X Total FCI	**0.82**	**0.96**	**1.08**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A2-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 411	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.50**		
	TOTAL FCU = SAR Length (411) X Multiplication Factor (0.00125) X Total FCI	**0.59**	**0.68**	**0.77**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A3-(1)	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	5	6	7
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	5	6	7
S16-TRIB7-A3-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	30	33	37
176	**Hydrologic FCI = Subtotal / 100**	**0.30**	**0.33**	**0.37**
	WQ1a. Bank Stability *(e)*	5	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	2	4	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	8	8	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	29	37	47
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.36**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3
B-4	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	2	4	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	5	6	7
	HB10. Vegetative Protection *(e)*	8	8	9
	HB11. Riparian Zone *(e)*	1	5	9
	HB12. Riparian Habitat Condition	2	4	7
	Habitat Subtotal	32	44	58
	Habitat FCI = Subtotal / 120	**0.27**	**0.37**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.93**	**1.16**	**1.44**
	TOTAL FCU = SAR Length (176) X Multiplication Factor (0.00125) X Total FCI	**0.20**	**0.26**	**0.32**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S16-TRIB7-A3-(2a)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S16-TRIB7-A3-(2)	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41		
322	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	5		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	40	47		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
B-4	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.52**		
	TOTAL FCU = SAR Length (322) X Multiplication Factor (0.00125) X Total FCI	**0.47**	**0.54**	**0.61**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-(2b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 408	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.53**		
	TOTAL FCU = SAR Length (408) X Multiplication Factor (0.00125) X Total FCI	**0.60**	**0.69**	**0.78**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A3-(2c)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB7-A3-(2)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42
492	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	5
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	40	47
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.53**
	TOTAL FCU = SAR Length (492) X Multiplication Factor (0.00125) X Total FCI	**0.72**	**0.84**	**0.94**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
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(e) Score shown is the average of the left and right bank scores.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A3-(2d)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB7-A3-(2)	H3a. Channel Sinuosity	7	7	7
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	42	43	45
570	**Hydrologic FCI = Subtotal / 100**	**0.42**	**0.43**	**0.45**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	5
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	40	47
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.20**	**1.39**	**1.56**
	TOTAL FCU = SAR Length (570) X Multiplication Factor (0.00125) X Total FCI	**0.86**	**0.99**	**1.11**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A3-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 821	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	45	55	63
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.37**	**1.55**
	TOTAL FCU = SAR Length (821) X Multiplication Factor (0.00125) X Total FCI	**1.21**	**1.41**	**1.59**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-(4)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 407	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**		
	TOTAL FCU = SAR Length (407) X Multiplication Factor (0.00125) X Total FCI	**0.60**	**0.70**	**0.79**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBA-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 607	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.30**	**1.48**		
	TOTAL FCU = SAR Length (607) X Multiplication Factor (0.00125) X Total FCI	**0.84**	**0.99**	**1.12**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S16-TRIB7-A3-TRIBA-(1b)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S16-TRIB7-A3-TRIBA-(1)	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42		
537	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	5		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	40	47		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
B-4	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.52**		
	TOTAL FCU = SAR Length (537) X Multiplication Factor (0.00125) X Total FCI	**0.78**	**0.91**	**1.02**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBA-AA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBA-AA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 165	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.49**		
	TOTAL FCU = SAR Length (165) X Multiplication Factor (0.00125) X Total FCI	**0.24**	**0.27**	**0.31**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBA-AB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBA-AB-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 215	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.51**		
	TOTAL FCU = SAR Length (215) X Multiplication Factor (0.00125) X Total FCI	**0.31**	**0.36**	**0.41**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBB-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 167	Hydrologic Subtotal	41	42	44		
	Hydrologic FCI = Subtotal / 100	**0.41**	**0.42**	**0.44**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (167) X Multiplication Factor (0.00125) X Total FCI	**0.24**	**0.28**	**0.32**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A3-TRIBC-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB7-A3-TRIBC-(1)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39
249	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	3	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	39	46
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.28**	**1.46**
	TOTAL FCU = SAR Length (249) X Multiplication Factor (0.00125) X Total FCI	**0.34**	**0.40**	**0.45**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBD-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBD-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 121	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**		
	TOTAL FCU = SAR Length (121) X Multiplication Factor (0.00125) X Total FCI	**0.17**	**0.20**	**0.23**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A3-TRIBE-(1a)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB7-A3-TRIBE-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
151	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (151) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.25**	**0.29**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBE-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBE-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 291	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**		
	TOTAL FCU = SAR Length (291) X Multiplication Factor (0.00125) X Total FCI	**0.42**	**0.49**	**0.56**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A3-TRIBE-(1c)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB7-A3-TRIBE-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 220	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (220) X Multiplication Factor (0.00125) X Total FCI	**0.32**	**0.37**	**0.42**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
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- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBF-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	3	5	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBF-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 453	Hydrologic Subtotal	28	30	36		
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.30**	**0.36**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	2	4	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	2	5	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	8	8	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	37	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.46**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	6	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	8	8	9		
	HB11. Riparian Zone *(e)*	2	5	9		
	HB12. Riparian Habitat Condition	2	4	7		
	Habitat Subtotal	38	46	59		
	Habitat FCI = Subtotal / 120	**0.32**	**0.38**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.00**	**1.15**	**1.44**		
	TOTAL FCU = SAR Length (453) X Multiplication Factor (0.00125) X Total FCI	**0.57**	**0.65**	**0.82**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBF-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBF-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 573	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.34**	**1.51**		
	TOTAL FCU = SAR Length (573) X Multiplication Factor (0.00125) X Total FCI	**0.82**	**0.96**	**1.08**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A3-TRIBF-AA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	6
	H2b. Channel Capacity to Flow Frequency	7	7	7
Baseline SAR Name(s): S16-TRIB7-A3-TRIBF-AA-(1)	H2c. Channel Bank Stability *(e)*	6	6	6
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	6	6	6
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 369	Hydrologic Subtotal	34	34	35
	Hydrologic FCI = Subtotal / 100	**0.34**	**0.34**	**0.35**
	WQ1a. Bank Stability *(e)*	6	6	6
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	6
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	39	45
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.56**
	HB1. Flow Regime	1	1	1
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	7	7	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	6	6
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	51	58
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.09**	**1.25**	**1.40**
	TOTAL FCU = SAR Length (369) X Multiplication Factor (0.00125) X Total FCI	**0.50**	**0.58**	**0.65**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A3-TRIBG-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB7-A3-TRIBG-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
403	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	40	46
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.50**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.49**
	TOTAL FCU = SAR Length (403) X Multiplication Factor (0.00125) X Total FCI	**0.57**	**0.67**	**0.75**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A3-TRIBH-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB7-A3-TRIBH-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 259	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.49**
	TOTAL FCU = SAR Length (259) X Multiplication Factor (0.00125) X Total FCI	**0.37**	**0.43**	**0.48**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A3-TRIBI-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A3-TRIBI-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 366	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (366) X Multiplication Factor (0.00125) X Total FCI	**0.53**	**0.62**	**0.70**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A4-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A4-(1)	H2c. Channel Bank Stability *(e)*	8	8	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 436	Hydrologic Subtotal	47	47	48		
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.47**	**0.48**		
	WQ1a. Bank Stability *(e)*	8	8	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	4	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	8	8	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	46	50	57		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.58**	**0.63**	**0.71**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	3	4	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	4		
	HB5. Sediment Deposition and Scouring	8	8	8		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	2	4	6		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	8	8	8		
	HB10. Vegetative Protection *(e)*	8	8	9		
	HB11. Riparian Zone *(e)*	4	6	9		
	HB12. Riparian Habitat Condition	7	7	7		
	Habitat Subtotal	54	59	67		
	Habitat FCI = Subtotal / 120	**0.45**	**0.49**	**0.56**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.50**	**1.59**	**1.75**		
	TOTAL FCU = SAR Length (436) X Multiplication Factor (0.00125) X Total FCI	**0.82**	**0.87**	**0.95**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A4-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 359	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-5, B-8	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**
	TOTAL FCU = SAR Length (359) X Multiplication Factor (0.00125) X Total FCI	**0.53**	**0.61**	**0.70**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB7-A4-(3)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB7-A4-(3)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	40	41	43
237	**Hydrologic FCI = Subtotal / 100**	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-5	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**
	TOTAL FCU = SAR Length (237) X Multiplication Factor (0.00125) X Total FCI	**0.35**	**0.41**	**0.46**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A5-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	5	6	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s): S16-TRIB7-A5-(1)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 451	Hydrologic Subtotal	30	31	35
	Hydrologic FCI = Subtotal / 100	**0.30**	**0.31**	**0.35**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	3	6	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	29	37	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.36**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	1	1	1
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	5	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	3	6	9
	HB12. Riparian Habitat Condition	5	6	7
	Habitat Subtotal	33	43	55
	Habitat FCI = Subtotal / 120	**0.28**	**0.36**	**0.46**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.94**	**1.13**	**1.40**
	TOTAL FCU = SAR Length (451) X Multiplication Factor (0.00125) X Total FCI	**0.53**	**0.64**	**0.79**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A6-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A6-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 559	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.28**	**1.46**		
	TOTAL FCU = SAR Length (559) X Multiplication Factor (0.00125) X Total FCI	**0.77**	**0.89**	**1.02**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A6-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB7-A6-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 461	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.28**	**1.46**
	TOTAL FCU = SAR Length (461) X Multiplication Factor (0.00125) X Total FCI	**0.63**	**0.74**	**0.84**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB7-A6-TRIBB-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB7-A6-TRIBB-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 373	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.32**	**1.49**
	TOTAL FCU = SAR Length (373) X Multiplication Factor (0.00125) X Total FCI	**0.53**	**0.62**	**0.69**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB7-A7-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB7-A7-(1)	H2c. Channel Bank Stability *(e)*	8	8	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	5	5	5		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 664	Hydrologic Subtotal	52	52	53		
	Hydrologic FCI = Subtotal / 100	**0.52**	**0.52**	**0.53**		
	WQ1a. Bank Stability *(e)*	8	8	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	7	8	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	49	52	58		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.61**	**0.65**	**0.73**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-7	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	6	6	6		
	HB4. Pool Variability	6	6	6		
	HB5. Sediment Deposition and Scouring	8	8	8		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	8	8	8		
	HB10. Vegetative Protection *(e)*	7	8	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	6	6	7		
	Habitat Subtotal	66	68	72		
	Habitat FCI = Subtotal / 120	**0.55**	**0.57**	**0.60**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.68**	**1.74**	**1.86**		
	TOTAL FCU = SAR Length (664) X Multiplication Factor (0.00125) X Total FCI	**1.39**	**1.44**	**1.54**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB8-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	4	5	7
Baseline SAR Name(s): S16-TRIB8-(1)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	6	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 708	Hydrologic Subtotal	28	30	37
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.30**	**0.37**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	4	6	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	38	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.48**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	5	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	4	6	9
	HB12. Riparian Habitat Condition	6	6	7
	Habitat Subtotal	39	47	59
	Habitat FCI = Subtotal / 120	**0.33**	**0.39**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.02**	**1.17**	**1.45**
	TOTAL FCU = SAR Length (708) X Multiplication Factor (0.00125) X Total FCI	**0.90**	**1.04**	**1.28**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-(2a)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 276	Hydrologic Subtotal	50	51	53		
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.60**	**1.76**		
	TOTAL FCU = SAR Length (276) X Multiplication Factor (0.00125) X Total FCI	**0.49**	**0.55**	**0.61**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-(2b)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 388	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.59**	**1.75**		
	TOTAL FCU = SAR Length (388) X Multiplication Factor (0.00125) X Total FCI	**0.68**	**0.77**	**0.85**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-(2c)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,171	Hydrologic Subtotal	50	51	53		
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.60**	**1.76**		
	TOTAL FCU = SAR Length (1171) X Multiplication Factor (0.00125) X Total FCI	**2.06**	**2.34**	**2.58**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB8-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 511	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (511) X Multiplication Factor (0.00125) X Total FCI	**0.70**	**0.84**	**0.95**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-A1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-A1-(2)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 139	Hydrologic Subtotal	33	34	36		
	Hydrologic FCI = Subtotal / 100	**0.33**	**0.34**	**0.36**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	39	42	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.53**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	6	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	6	6	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	5	7	9		
	HB11. Riparian Zone *(e)*	7	8	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	42	48	57		
	Habitat FCI = Subtotal / 120	**0.35**	**0.40**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.27**	**1.42**		
	TOTAL FCU = SAR Length (139) X Multiplication Factor (0.00125) X Total FCI	**0.20**	**0.22**	**0.25**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB8-A1-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB8-A1-(3)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 221	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.33**	**1.51**
	TOTAL FCU = SAR Length (221) X Multiplication Factor (0.00125) X Total FCI	**0.31**	**0.37**	**0.42**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-A2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	3	5	7		
Baseline SAR Name(s): S16-TRIB8-A2-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	5	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 721	Hydrologic Subtotal	26	30	37		
	Hydrologic FCI = Subtotal / 100	**0.26**	**0.30**	**0.37**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	36	39	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.45**	**0.49**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	4	6		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	38	46	58		
	Habitat FCI = Subtotal / 120	**0.32**	**0.38**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.03**	**1.17**	**1.44**		
	TOTAL FCU = SAR Length (721) X Multiplication Factor (0.00125) X Total FCI	**0.93**	**1.05**	**1.30**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-A2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-A2-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	2	2	2		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 411	Hydrologic Subtotal	37	38	40		
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	2	2	2		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.33**	**1.52**		
	TOTAL FCU = SAR Length (411) X Multiplication Factor (0.00125) X Total FCI	**0.58**	**0.68**	**0.78**		

Notes:
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(c) FCI = Functional Condition Index.
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(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-A3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	3	5	7		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-A3-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 356	Hydrologic Subtotal	30	32	36		
	Hydrologic FCI = Subtotal / 100	**0.30**	**0.32**	**0.36**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	3	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	33	38	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-2	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	4	5	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	2	4	6		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	3	6	9		
	HB12. Riparian Habitat Condition	8	8	8		
	Habitat Subtotal	35	45	57		
	Habitat FCI = Subtotal / 120	**0.29**	**0.38**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.00**	**1.17**	**1.42**		
	TOTAL FCU = SAR Length (356) X Multiplication Factor (0.00125) X Total FCI	**0.45**	**0.52**	**0.63**		

Notes:
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB8-A3-(2)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39
171	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-2	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (171) X Multiplication Factor (0.00125) X Total FCI	**0.24**	**0.28**	**0.32**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:

(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.

(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.

(c) FCI = Functional Condition Index.

(d) FCU = Functional Capacity Unit.

(e) Score shown is the average of the left and right bank scores.

(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.

(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.

(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.

(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB8-A3-(3)	H2a. Channel Condition/ Alteration	3	5	7
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	6	7
S16-TRIB8-A3-(3)	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	31	33	37
129	**Hydrologic FCI = Subtotal / 100**	**0.31**	**0.33**	**0.37**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	6	6	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	37	40	47
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.46**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	2	3	4
B-2	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	3	4
	HB5. Sediment Deposition and Scouring	5	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	2	4	6
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	7	8	9
	HB12. Riparian Habitat Condition	8	8	8
	Habitat Subtotal	41	49	58
	Habitat FCI = Subtotal / 120	**0.34**	**0.41**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.24**	**1.44**
	TOTAL FCU = SAR Length (129) X Multiplication Factor (0.00125) X Total FCI	**0.18**	**0.20**	**0.23**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB8-A4-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	7
	H2b. Channel Capacity to Flow Frequency	7	7	7
Baseline SAR Name(s): S16-TRIB8-A4-(1)	H2c. Channel Bank Stability *(e)*	7	7	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 596	Hydrologic Subtotal	34	34	36
	Hydrologic FCI = Subtotal / 100	**0.34**	**0.34**	**0.36**
	WQ1a. Bank Stability *(e)*	7	7	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	3	6	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	7	8	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	38	42	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.53**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	2	3	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	5	6	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	7	7	7
	HB10. Vegetative Protection *(e)*	7	8	9
	HB11. Riparian Zone *(e)*	3	6	9
	HB12. Riparian Habitat Condition	8	8	8
	Habitat Subtotal	45	52	59
	Habitat FCI = Subtotal / 120	**0.38**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.19**	**1.30**	**1.44**
	TOTAL FCU = SAR Length (596) X Multiplication Factor (0.00125) X Total FCI	**0.89**	**0.97**	**1.07**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-A4-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB8-A4-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 185	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**		
	TOTAL FCU = SAR Length (185) X Multiplication Factor (0.00125) X Total FCI	**0.25**	**0.30**	**0.34**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB8-A5-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB8-A5-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
849	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-3	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (849) X Multiplication Factor (0.00125) X Total FCI	**1.22**	**1.43**	**1.63**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB8-A6-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): S16-TRIB8-A6-(1)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 113	Hydrologic Subtotal	30	31	37		
	Hydrologic FCI = Subtotal / 100	**0.30**	**0.31**	**0.37**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	3	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	31	38	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.39**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-3	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	1	1	1		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	5	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	5	6	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	3	6	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	34	45	56		
	Habitat FCI = Subtotal / 120	**0.28**	**0.38**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.97**	**1.16**	**1.42**		
	TOTAL FCU = SAR Length (113) X Multiplication Factor (0.00125) X Total FCI	**0.14**	**0.16**	**0.20**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB10-(1a)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB10-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,187	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-9	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.79**		
	TOTAL FCU = SAR Length (1187) X Multiplication Factor (0.00125) X Total FCI	**2.08**	**2.37**	**2.66**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB10-(1b)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB10-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 429	Hydrologic Subtotal	47	48	50		
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.48**	**0.50**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-9	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	50	60	68		
	Habitat FCI = Subtotal / 120	**0.42**	**0.50**	**0.57**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.36**	**1.57**	**1.75**		
	TOTAL FCU = SAR Length (429) X Multiplication Factor (0.00125) X Total FCI	**0.73**	**0.84**	**0.94**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB10-(2)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB10-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 517	Hydrologic Subtotal	50	51	53
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: B-8, B-9	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.61**	**1.80**
	TOTAL FCU = SAR Length (517) X Multiplication Factor (0.00125) X Total FCI	**0.91**	**1.04**	**1.16**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB10-A1-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
490	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-9	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.34**	**1.53**
	TOTAL FCU = SAR Length (490) X Multiplication Factor (0.00125) X Total FCI	**0.70**	**0.82**	**0.94**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB10-A1-(2a)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB10-A1-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 378	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**
	TOTAL FCU = SAR Length (378) X Multiplication Factor (0.00125) X Total FCI	**0.55**	**0.65**	**0.74**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB10-A1-(2b)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB10-A1-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 599	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.13**	**1.33**	**1.52**
	TOTAL FCU = SAR Length (599) X Multiplication Factor (0.00125) X Total FCI	**0.85**	**1.00**	**1.14**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB11-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB11-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	6	6	6		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,108	Hydrologic Subtotal	52	53	55		
	Hydrologic FCI = Subtotal / 100	**0.52**	**0.53**	**0.55**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.63**	**1.82**		
	TOTAL FCU = SAR Length (1108) X Multiplication Factor (0.00125) X Total FCI	**1.98**	**2.26**	**2.52**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S16-TRIB11-(2)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S16-TRIB11-(2)	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	51	52	54		
1,040	**Hydrologic FCI = Subtotal / 100**	**0.51**	**0.52**	**0.54**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	38	47	55		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5		
B-8	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.42**	**1.62**	**1.81**		
	TOTAL FCU = SAR Length (1040) X Multiplication Factor (0.00125) X Total FCI	**1.85**	**2.11**	**2.35**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB11-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S16-TRIB11-A1-(1)	H2c. Channel Bank Stability *(e)*	8	8	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 126	Hydrologic Subtotal	39	39	40
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.39**	**0.40**
	WQ1a. Bank Stability *(e)*	8	8	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	8	8	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	44	45	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.55**	**0.56**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	8	8	8
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	8	8	8
	HB10. Vegetative Protection *(e)*	8	8	9
	HB11. Riparian Zone *(e)*	6	7	9
	HB12. Riparian Habitat Condition	8	8	8
	Habitat Subtotal	56	59	64
	Habitat FCI = Subtotal / 120	**0.47**	**0.49**	**0.53**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.44**	**1.55**
	TOTAL FCU = SAR Length (126) X Multiplication Factor (0.00125) X Total FCI	**0.22**	**0.23**	**0.24**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB11-A1-(2)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB11-A1-(2),	H3a. Channel Sinuosity	2	2	2
S16-TRIB11-(2)	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning’s n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	37	38	40
95	**Hydrologic FCI = Subtotal / 100**	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-8	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.33**	**1.51**
	TOTAL FCU = SAR Length (95) X Multiplication Factor (0.00125) X Total FCI	**0.13**	**0.16**	**0.18**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB11-A2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S16-TRIB11-A2-(1)	H2c. Channel Bank Stability *(e)*	8	8	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 72	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	8	8	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	44	45	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.55**	**0.56**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	8	8	8		
	HB10. Vegetative Protection *(e)*	6	7	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	8	8	8		
	Habitat Subtotal	54	57	62		
	Habitat FCI = Subtotal / 120	**0.45**	**0.48**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.38**	**1.43**	**1.54**		
	TOTAL FCU = SAR Length (72) X Multiplication Factor (0.00125) X Total FCI	**0.12**	**0.13**	**0.14**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB11-A2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB11-A2-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 79	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**		
	TOTAL FCU = SAR Length (79) X Multiplication Factor (0.00125) X Total FCI	**0.11**	**0.13**	**0.15**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB11-A3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	7	7	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S16-TRIB11-A3-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 65	Hydrologic Subtotal	39	39	40		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.39**	**0.40**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	8	8	8		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	7	8	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	42	44	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.53**	**0.55**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	2	3	4		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	8	8	8		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	7	7	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	7	8	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition	8	8	8		
	Habitat Subtotal	53	57	62		
	Habitat FCI = Subtotal / 120	**0.44**	**0.48**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.36**	**1.42**	**1.52**		
	TOTAL FCU = SAR Length (65) X Multiplication Factor (0.00125) X Total FCI	**0.11**	**0.12**	**0.12**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB11-A3-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s): S16-TRIB11-A3-(2)	H2c. Channel Bank Stability *(e)*	4	5	7
	H3a. Channel Sinuosity	6	6	6
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning’s n *(f)*	2	2	3
	H3d. Channel Incision	6	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 291	Hydrologic Subtotal	30	32	39
	Hydrologic FCI = Subtotal / 100	**0.30**	**0.32**	**0.39**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	4	6	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	37	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.46**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	5	6	7
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	4	5	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	6	7	9
	HB11. Riparian Zone *(e)*	4	6	9
	HB12. Riparian Habitat Condition	6	7	7
	Habitat Subtotal	39	48	60
	Habitat FCI = Subtotal / 120	**0.33**	**0.40**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.03**	**1.18**	**1.48**
	TOTAL FCU = SAR Length (291) X Multiplication Factor (0.00125) X Total FCI	**0.37**	**0.43**	**0.54**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S16-TRIB11-A3-(3)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S16-TRIB11-A3-(3)	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	36	37	39		
106	**Hydrologic FCI = Subtotal / 100**	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification:	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
B-8	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.31**	**1.49**		
	TOTAL FCU = SAR Length (106) X Multiplication Factor (0.00125) X Total FCI	**0.15**	**0.17**	**0.20**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S16-TRIB12-(1a)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S16-TRIB12-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
581	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification:	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	41	49
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
B-9	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (581) X Multiplication Factor (0.00125) X Total FCI	**0.84**	**0.98**	**1.12**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB12-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB12-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 822	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-9	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (822) X Multiplication Factor (0.00125) X Total FCI	**1.18**	**1.39**	**1.58**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S16-TRIB13-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	7	7	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s): S16-TRIB13-(1)	H2c. Channel Bank Stability *(e)*	7	7	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	6	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 699	Hydrologic Subtotal	32	32	35
	Hydrologic FCI = Subtotal / 100	**0.32**	**0.32**	**0.35**
	WQ1a. Bank Stability *(e)*	7	7	7
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	8	8	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	7	8	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	43	44	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.54**	**0.55**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	2	3	4
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	8	8	8
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	6	6	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	7	7	7
	HB10. Vegetative Protection *(e)*	7	8	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	8	8	8
	Habitat Subtotal	52	55	60
	Habitat FCI = Subtotal / 120	**0.43**	**0.46**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.29**	**1.33**	**1.44**
	TOTAL FCU = SAR Length (699) X Multiplication Factor (0.00125) X Total FCI	**1.13**	**1.16**	**1.26**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S16-TRIB13-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S16-TRIB13-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	3	3	4		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 192	Hydrologic Subtotal	37	38	40		
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone B	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification: Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: B-8	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.32**	**1.50**		
	TOTAL FCU = SAR Length (192) X Multiplication Factor (0.00125) X Total FCI	**0.27**	**0.32**	**0.36**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-(7)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 641	Hydrologic Subtotal	48	49	51
	Hydrologic FCI = Subtotal / 100	**0.48**	**0.49**	**0.51**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	38	47	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	50	60	68
	Habitat FCI = Subtotal / 120	**0.42**	**0.50**	**0.57**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.37**	**1.58**	**1.76**
	TOTAL FCU = SAR Length (641) X Multiplication Factor (0.00125) X Total FCI	**1.10**	**1.27**	**1.41**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-(8)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	3	5	7		
Baseline SAR Name(s): S25-(8)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	4	5	7		
	H4a. Pools	5	5	5		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 3,619	Hydrologic Subtotal	37	42	49		
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.42**	**0.49**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	7	6	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	1	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	39	46	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-9, C-12	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	1	3	6		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	1	4	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	1	5	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	35	48	63		
	Habitat FCI = Subtotal / 120	**0.29**	**0.40**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.40**	**1.70**		
	TOTAL FCU = SAR Length (3619) X Multiplication Factor (0.00125) X Total FCI	**5.20**	**6.33**	**7.69**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-(9a)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-(9)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning’s n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 4,212	Hydrologic Subtotal	51	52	54
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.42**	**1.60**	**1.77**
	TOTAL FCU = SAR Length (4212) X Multiplication Factor (0.00125) X Total FCI	**7.48**	**8.42**	**9.32**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-(9b)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-(9)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	5	5	5		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,480	Hydrologic Subtotal	52	53	55		
	Hydrologic FCI = Subtotal / 100	**0.52**	**0.53**	**0.55**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-3	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.61**	**1.78**		
	TOTAL FCU = SAR Length (1480) X Multiplication Factor (0.00125) X Total FCI	**2.65**	**2.98**	**3.29**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	7
	H2b. Channel Capacity to Flow Frequency	7	7	7
Baseline SAR Name(s): S25-TRIB1-(1)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	7	7	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 603	Hydrologic Subtotal	37	37	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.37**	**0.40**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	6	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	6	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	38	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-2	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	7	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	6	6	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	6	7	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	8	8	8
	Habitat Subtotal	50	52	59
	Habitat FCI = Subtotal / 120	**0.42**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.26**	**1.30**	**1.48**
	TOTAL FCU = SAR Length (603) X Multiplication Factor (0.00125) X Total FCI	**0.95**	**0.98**	**1.12**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB1-(2a)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB1-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 683	Hydrologic Subtotal	50	51	53		
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	47	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-3	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.61**	**1.79**		
	TOTAL FCU = SAR Length (683) X Multiplication Factor (0.00125) X Total FCI	**1.20**	**1.37**	**1.53**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S25-TRIB1-(2b)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S25-TRIB1-(2)	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	49	50	52		
270	**Hydrologic FCI = Subtotal / 100**	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	5	7		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	38	47	55		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.48**	**0.59**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5		
C-3	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.39**	**1.60**	**1.78**		
	TOTAL FCU = SAR Length (270) X Multiplication Factor (0.00125) X Total FCI	**0.47**	**0.54**	**0.60**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB1-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB1-A1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 268	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-3	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.32**	**1.50**		
	TOTAL FCU = SAR Length (268) X Multiplication Factor (0.00125) X Total FCI	**0.37**	**0.44**	**0.50**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S25-TRIB2-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
N/A	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42
535	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
C-5	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (535) X Multiplication Factor (0.00125) X Total FCI	**0.78**	**0.90**	**1.02**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB2-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	6	6	7		
	H2b. Channel Capacity to Flow Frequency	5	6	7		
Baseline SAR Name(s): S25-TRIB2-(2)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	5	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 714	Hydrologic Subtotal	29	31	36		
	Hydrologic FCI = Subtotal / 100	**0.29**	**0.31**	**0.36**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	3	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	27	35	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.34**	**0.44**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	6	6	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	3	6	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	38	46	58		
	Habitat FCI = Subtotal / 120	**0.32**	**0.38**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.94**	**1.13**	**1.43**		
	TOTAL FCU = SAR Length (714) X Multiplication Factor (0.00125) X Total FCI	**0.84**	**1.01**	**1.28**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB2-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB2-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 406	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	47	54		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.77**		
	TOTAL FCU = SAR Length (406) X Multiplication Factor (0.00125) X Total FCI	**0.71**	**0.81**	**0.90**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB3-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 681	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (681) X Multiplication Factor (0.00125) X Total FCI	**0.98**	**1.15**	**1.31**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB4-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB4-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	2	2	2
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 317	Hydrologic Subtotal	37	38	40
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-5	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	2	2	2
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.31**	**1.49**
	TOTAL FCU = SAR Length (317) X Multiplication Factor (0.00125) X Total FCI	**0.44**	**0.52**	**0.59**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S25-TRIB4-(2)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S25-TRIB4-(2)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42
1,406	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
C-6	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**
	TOTAL FCU = SAR Length (1406) X Multiplication Factor (0.00125) X Total FCI	**2.06**	**2.39**	**2.71**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
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Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB5-(0)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,654	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**		
	TOTAL FCU = SAR Length (1654) X Multiplication Factor (0.00125) X Total FCI	**2.40**	**2.81**	**3.20**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB5-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB5-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 443	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (443) X Multiplication Factor (0.00125) X Total FCI	**0.64**	**0.75**	**0.85**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB6-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,908	Hydrologic Subtotal	40	41	43
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-5, C-6	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**
	TOTAL FCU = SAR Length (1908) X Multiplication Factor (0.00125) X Total FCI	**2.79**	**3.24**	**3.67**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB6-(2)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	7	7	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): S25-TRIB6-(2)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 909	Hydrologic Subtotal	48	48	51		
	Hydrologic FCI = Subtotal / 100	**0.48**	**0.48**	**0.51**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	37	46	55		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.46**	**0.58**	**0.69**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-6	HB2. Epifaunal Substrate and Available Cover	1	2	3	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	4	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	5	7	9		
	HB11. Riparian Zone *(e)*	1	5	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	41	52	64		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.28**	**1.49**	**1.73**		
	TOTAL FCU = SAR Length (909) X Multiplication Factor (0.00125) X Total FCI	**1.45**	**1.69**	**1.97**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB9-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB9-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 391	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.32**	**1.49**
	TOTAL FCU = SAR Length (391) X Multiplication Factor (0.00125) X Total FCI	**0.55**	**0.65**	**0.73**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB10-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB10-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 837	Hydrologic Subtotal	38	39	41
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.51**
	TOTAL FCU = SAR Length (837) X Multiplication Factor (0.00125) X Total FCI	**1.19**	**1.39**	**1.58**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB10-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 322	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.12**	**1.32**	**1.49**		
	TOTAL FCU = SAR Length (322) X Multiplication Factor (0.00125) X Total FCI	**0.45**	**0.53**	**0.60**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB10-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB10-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 395	Hydrologic Subtotal	47	48	50		
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.48**	**0.50**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	53		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.66**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	5	5	5	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.37**	**1.56**	**1.74**		
	TOTAL FCU = SAR Length (395) X Multiplication Factor (0.00125) X Total FCI	**0.68**	**0.77**	**0.86**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB10-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 692	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**
	TOTAL FCU = SAR Length (692) X Multiplication Factor (0.00125) X Total FCI	**0.96**	**1.13**	**1.28**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB11-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,147	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**		
	TOTAL FCU = SAR Length (1147) X Multiplication Factor (0.00125) X Total FCI	**1.59**	**1.88**	**2.12**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB11-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB11-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 370	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	41	51	59
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**
	TOTAL FCU = SAR Length (370) X Multiplication Factor (0.00125) X Total FCI	**0.51**	**0.61**	**0.68**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB12-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 334	Hydrologic Subtotal	36	37	39
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-13	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	42	52	60
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.30**	**1.48**
	TOTAL FCU = SAR Length (334) X Multiplication Factor (0.00125) X Total FCI	**0.46**	**0.54**	**0.62**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB12-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB12-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 382	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-13	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.36**	**1.55**		
	TOTAL FCU = SAR Length (382) X Multiplication Factor (0.00125) X Total FCI	**0.55**	**0.65**	**0.74**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB12-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB12-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 444	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-10	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.34**	**1.51**		
	TOTAL FCU = SAR Length (444) X Multiplication Factor (0.00125) X Total FCI	**0.64**	**0.74**	**0.84**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB12-(4)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S25-TRIB12-(4)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	4	4	4		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 478	Hydrologic Subtotal	37	38	40		
	Hydrologic FCI = Subtotal / 100	**0.37**	**0.38**	**0.40**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	6	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	38	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover		1	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability		1	3		
	HB5. Sediment Deposition and Scouring		3	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration		3	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*		4	9		
	HB11. Riparian Zone *(e)*	6	7	9		
	HB12. Riparian Habitat Condition		3	7		
	Habitat Subtotal	20	36	58		
	Habitat FCI = Subtotal / 120	**0.17**	**0.30**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.94**	**1.16**	**1.47**		
	TOTAL FCU = SAR Length (478) X Multiplication Factor (0.00125) X Total FCI	**0.56**	**0.69**	**0.88**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-(5a)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 308	Hydrologic Subtotal	49	50	52
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	39	47	54
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**
	HB1. Flow Regime	2	2	2
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.77**
	TOTAL FCU = SAR Length (308) X Multiplication Factor (0.00125) X Total FCI	**0.54**	**0.62**	**0.68**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB12-(5b)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 627	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	39	47	54		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.77**		
	TOTAL FCU = SAR Length (627) X Multiplication Factor (0.00125) X Total FCI	**1.10**	**1.25**	**1.39**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-(6)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB12-(6)	H2c. Channel Bank Stability *(e)*	4	5	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 590	Hydrologic Subtotal	42	44	49
	Hydrologic FCI = Subtotal / 100	**0.42**	**0.44**	**0.49**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	4	4	4
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	4	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	29	41	55
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.36**	**0.51**	**0.69**
	HB1. Flow Regime	2	2	2
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	1	1	1
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	1	3	6
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	1	4	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	1	5	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	26	42	61
	Habitat FCI = Subtotal / 120	**0.22**	**0.35**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.00**	**1.30**	**1.69**
	TOTAL FCU = SAR Length (590) X Multiplication Factor (0.00125) X Total FCI	**0.74**	**0.96**	**1.25**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB12-(7)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB12-(7)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 310	Hydrologic Subtotal	47	48	50		
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.48**	**0.50**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.38**	**1.56**	**1.73**		
	TOTAL FCU = SAR Length (310) X Multiplication Factor (0.00125) X Total FCI	**0.53**	**0.60**	**0.67**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 953	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (953) X Multiplication Factor (0.00125) X Total FCI	**1.38**	**1.61**	**1.82**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB12-A1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 352	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.18**	**1.37**	**1.55**		
	TOTAL FCU = SAR Length (352) X Multiplication Factor (0.00125) X Total FCI	**0.52**	**0.60**	**0.68**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-A1-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 550	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (550) X Multiplication Factor (0.00125) X Total FCI	**0.80**	**0.93**	**1.05**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-A2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB12-A2-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,166	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: C-10	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.50**
	TOTAL FCU = SAR Length (1166) X Multiplication Factor (0.00125) X Total FCI	**1.68**	**1.94**	**2.19**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB12-A3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S25-TRIB12-A3-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 780	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**
	HB1. Flow Regime	1	1	1
Reference Figure: C-10, C-13	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**
	TOTAL FCU = SAR Length (780) X Multiplication Factor (0.00125) X Total FCI	**1.12**	**1.32**	**1.50**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB13-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 616	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure: C-8	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (616) X Multiplication Factor (0.00125) X Total FCI	**0.89**	**1.04**	**1.18**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB13-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S25-TRIB13-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 712	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-8	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.51**		
	TOTAL FCU = SAR Length (712) X Multiplication Factor (0.00125) X Total FCI	**1.03**	**1.20**	**1.34**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S25-TRIB13-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 1,324	Hydrologic Subtotal	48	49	51
	Hydrologic FCI = Subtotal / 100	**0.48**	**0.49**	**0.51**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	39	47	54
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**
	HB1. Flow Regime	2	2	2
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.39**	**1.59**	**1.76**
	TOTAL FCU = SAR Length (1324) X Multiplication Factor (0.00125) X Total FCI	**2.30**	**2.63**	**2.91**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB13-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	1	4	7		
	H2b. Channel Capacity to Flow Frequency	6	6	7		
Baseline SAR Name(s): S25-TRIB13-A1-(1)	H2c. Channel Bank Stability *(e)*	4	5	7		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 953	Hydrologic Subtotal	22	26	34		
	Hydrologic FCI = Subtotal / 100	**0.22**	**0.26**	**0.34**		
	WQ1a. Bank Stability *(e)*	4	5	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	4	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	4	6	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	1	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	20	32	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.25**	**0.40**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-8, C-9	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	1	1	1		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	1	3	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	1	4	7		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	4	5	7		
	HB10. Vegetative Protection *(e)*	1	5	9		
	HB11. Riparian Zone *(e)*	4	6	9		
	HB12. Riparian Habitat Condition	4	5	7		
	Habitat Subtotal	20	35	54		
	Habitat FCI = Subtotal / 120	**0.17**	**0.29**	**0.45**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.64**	**0.95**	**1.38**		
	TOTAL FCU = SAR Length (953) X Multiplication Factor (0.00125) X Total FCI	**0.76**	**1.13**	**1.64**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB13-A1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 724	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-9	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (724) X Multiplication Factor (0.00125) X Total FCI	**1.06**	**1.23**	**1.39**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S25-TRIB14-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	3	5	7		
	H2b. Channel Capacity to Flow Frequency	4	5	7		
Baseline SAR Name(s): S25-TRIB14-(2)	H2c. Channel Bank Stability *(e)*	6	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	6	6	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 129	Hydrologic Subtotal	28	31	38		
	Hydrologic FCI = Subtotal / 100	**0.28**	**0.31**	**0.38**		
	WQ1a. Bank Stability *(e)*	6	6	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	1	3	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	1	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	27	35	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.34**	**0.44**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-12	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	1	1	1		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	4	5	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	6	7		
	HB10. Vegetative Protection *(e)*	1	5	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	3	5	7		
	Habitat Subtotal	34	44	56		
	Habitat FCI = Subtotal / 120	**0.28**	**0.37**	**0.47**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.90**	**1.11**	**1.43**		
	TOTAL FCU = SAR Length (129) X Multiplication Factor (0.00125) X Total FCI	**0.15**	**0.18**	**0.23**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S25-TRIB15-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	6	8
N/A	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	3	3	3
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	40	40	43
1,976	**Hydrologic FCI = Subtotal / 100**	**0.40**	**0.40**	**0.43**
	WQ1a. Bank Stability *(e)*	6	6	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	39	48
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.49**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
C-6, C-9	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	6	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	52	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.43**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.32**	**1.54**
	TOTAL FCU = SAR Length (1976) X Multiplication Factor (0.00125) X Total FCI	**2.87**	**3.26**	**3.80**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-(5a)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-(4), S26-(5)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 945	Hydrologic Subtotal	49	50	52
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-14	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.59**	**1.75**
	TOTAL FCU = SAR Length (945) X Multiplication Factor (0.00125) X Total FCI	**1.67**	**1.88**	**2.07**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-(5b)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-(5)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	5	5	5		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 451	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-11, C-14	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.59**	**1.75**		
	TOTAL FCU = SAR Length (451) X Multiplication Factor (0.00125) X Total FCI	**0.79**	**0.90**	**0.99**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-(5c)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-(5)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	6	6	6
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 2,790	Hydrologic Subtotal	51	52	54
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.61**	**1.77**
	TOTAL FCU = SAR Length (2790) X Multiplication Factor (0.00125) X Total FCI	**4.99**	**5.61**	**6.17**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-(6a)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-(6)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 2,540	Hydrologic Subtotal	50	51	53
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-7, C-11	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.42**	**1.60**	**1.76**
	TOTAL FCU = SAR Length (2540) X Multiplication Factor (0.00125) X Total FCI	**4.51**	**5.08**	**5.59**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-(6b)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-(6)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	6	6	6
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 1,580	Hydrologic Subtotal	51	52	54
	Hydrologic FCI = Subtotal / 100	**0.51**	**0.52**	**0.54**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.43**	**1.61**	**1.77**
	TOTAL FCU = SAR Length (1580) X Multiplication Factor (0.00125) X Total FCI	**2.82**	**3.18**	**3.50**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-(6c)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-(6)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	5	5	5		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 2,243	Hydrologic Subtotal	49	50	52		
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	4	4	4		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	52	62	70		
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.59**	**1.75**		
	TOTAL FCU = SAR Length (2243) X Multiplication Factor (0.00125) X Total FCI	**3.95**	**4.46**	**4.91**		

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(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-(6d)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-(6)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 248	Hydrologic Subtotal	49	50	52
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-5	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.59**	**1.75**
	TOTAL FCU = SAR Length (248) X Multiplication Factor (0.00125) X Total FCI	**0.44**	**0.49**	**0.54**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

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(e) Score shown is the average of the left and right bank scores.
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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-(6e)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-(6)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	5	5	5
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 3,175	Hydrologic Subtotal	50	51	53
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	4	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-2, C-5	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	4	4	4
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	52	62	70
	Habitat FCI = Subtotal / 120	**0.43**	**0.52**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.42**	**1.60**	**1.76**
	TOTAL FCU = SAR Length (3175) X Multiplication Factor (0.00125) X Total FCI	**5.64**	**6.35**	**6.99**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
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- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
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Notes:
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(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 200	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-2	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.29**	**1.47**		
	TOTAL FCU = SAR Length (200) X Multiplication Factor (0.00125) X Total FCI	**0.28**	**0.32**	**0.37**		

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(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	7	7	7		
	H2b. Channel Capacity to Flow Frequency	7	7	7		
Baseline SAR Name(s): S26-TRIB2-(1)	H2c. Channel Bank Stability *(e)*	7	7	7		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,019	Hydrologic Subtotal	38	38	39		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.38**	**0.39**		
	WQ1a. Bank Stability *(e)*	7	7	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	5	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	7	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	34	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-1	HB2. Epifaunal Substrate and Available Cover	1	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	2	2	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	7	7	7		
	HB10. Vegetative Protection *(e)*	3	6	9		
	HB11. Riparian Zone *(e)*	7	8	9		
	HB12. Riparian Habitat Condition	6	6	7		
	Habitat Subtotal	43	50	59		
	Habitat FCI = Subtotal / 120	**0.36**	**0.42**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.30**	**1.47**		
	TOTAL FCU = SAR Length (1019) X Multiplication Factor (0.00125) X Total FCI	**1.48**	**1.66**	**1.87**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S26-TRIB2-(2)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
N/A	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42		
787	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48		
Re-Establishment	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
C-1, C-4	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (787) X Multiplication Factor (0.00125) X Total FCI	**1.15**	**1.34**	**1.51**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB2-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB2-(3)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	3	3	3		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 301	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.37**	**1.56**		
	TOTAL FCU = SAR Length (301) X Multiplication Factor (0.00125) X Total FCI	**0.44**	**0.52**	**0.59**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB2-(4)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB2-(4)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	4	4	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 614	Hydrologic Subtotal	49	50	52
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-5	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.39**	**1.58**	**1.75**
	TOTAL FCU = SAR Length (614) X Multiplication Factor (0.00125) X Total FCI	**1.07**	**1.21**	**1.34**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB3-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	6	6	7
	H2b. Channel Capacity to Flow Frequency	7	7	7
Baseline SAR Name(s): S26-TRIB3-(1)	H2c. Channel Bank Stability *(e)*	6	6	7
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning’s n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 781	Hydrologic Subtotal	35	35	38
	Hydrologic FCI = Subtotal / 100	**0.35**	**0.35**	**0.38**
	WQ1a. Bank Stability *(e)*	6	6	7
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	6	6	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	2	4	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	3	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	23	34	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.29**	**0.43**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	3	5	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	6	7
	HB10. Vegetative Protection *(e)*	3	6	9
	HB11. Riparian Zone *(e)*	1	5	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	31	44	58
	Habitat FCI = Subtotal / 120	**0.26**	**0.37**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.90**	**1.14**	**1.45**
	TOTAL FCU = SAR Length (781) X Multiplication Factor (0.00125) X Total FCI	**0.88**	**1.11**	**1.42**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB3-(2a)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB3-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 717	Hydrologic Subtotal	48	49	53
	Hydrologic FCI = Subtotal / 100	**0.48**	**0.49**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.38**	**1.57**	**1.76**
	TOTAL FCU = SAR Length (717) X Multiplication Factor (0.00125) X Total FCI	**1.24**	**1.41**	**1.58**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2
S26-TRIB3-(2b)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S26-TRIB3-(2)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF):	Hydrologic Subtotal	48	49	53
1,480	**Hydrologic FCI = Subtotal / 100**	**0.48**	**0.49**	**0.53**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	4	4	4
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	4	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	38	46	52
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.48**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5
C-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.38**	**1.57**	**1.76**
	TOTAL FCU = SAR Length (1480) X Multiplication Factor (0.00125) X Total FCI	**2.55**	**2.90**	**3.26**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB3-(2c)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB3-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	5
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 703	Hydrologic Subtotal	47	48	52
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.48**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.37**	**1.56**	**1.75**
	TOTAL FCU = SAR Length (703) X Multiplication Factor (0.00125) X Total FCI	**1.20**	**1.37**	**1.54**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB4-(0)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 588	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-5	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.31**	**1.48**		
	TOTAL FCU = SAR Length (588) X Multiplication Factor (0.00125) X Total FCI	**0.82**	**0.96**	**1.09**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB4-(1)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB4-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	5		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 1,492	Hydrologic Subtotal	47	48	52		
	Hydrologic FCI = Subtotal / 100	**0.47**	**0.48**	**0.52**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	45	52		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.56**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-5	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.37**	**1.55**	**1.75**		
	TOTAL FCU = SAR Length (1492) X Multiplication Factor (0.00125) X Total FCI	**2.56**	**2.89**	**3.26**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S26-TRIB5-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S26-TRIB5-(1)	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41
487	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
C-4	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**
	TOTAL FCU = SAR Length (487) X Multiplication Factor (0.00125) X Total FCI	**0.71**	**0.82**	**0.93**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB6-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB6-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,022	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.34**	**1.51**
	TOTAL FCU = SAR Length (1022) X Multiplication Factor (0.00125) X Total FCI	**1.48**	**1.71**	**1.93**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB6-(1b)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB6-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,571	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-4	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.34**	**1.51**		
	TOTAL FCU = SAR Length (1571) X Multiplication Factor (0.00125) X Total FCI	**2.28**	**2.63**	**2.97**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB7-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,719	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-8	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (1719) X Multiplication Factor (0.00125) X Total FCI	**2.49**	**2.90**	**3.29**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB7-(2)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB7-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 1,329	Hydrologic Subtotal	48	49	51
	Hydrologic FCI = Subtotal / 100	**0.48**	**0.49**	**0.51**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	38	46	52
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.48**	**0.58**	**0.65**
	HB1. Flow Regime	2	2	2
Reference Figure: C-5	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	50	60	68
	Habitat FCI = Subtotal / 120	**0.42**	**0.50**	**0.57**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.37**	**1.57**	**1.73**
	TOTAL FCU = SAR Length (1329) X Multiplication Factor (0.00125) X Total FCI	**2.28**	**2.61**	**2.87**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB8-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB8-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 642	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-4, C-7	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	42	52	60		
	Habitat FCI = Subtotal / 120	**0.35**	**0.43**	**0.50**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.11**	**1.29**	**1.47**		
	TOTAL FCU = SAR Length (642) X Multiplication Factor (0.00125) X Total FCI	**0.89**	**1.04**	**1.18**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB9-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB9-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 742	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-4, C-7	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.50**		
	TOTAL FCU = SAR Length (742) X Multiplication Factor (0.00125) X Total FCI	**1.07**	**1.23**	**1.39**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB10-(1a)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB10-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,524	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	45	55	63		
	Habitat FCI = Subtotal / 120	**0.38**	**0.46**	**0.53**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.35**	**1.52**		
	TOTAL FCU = SAR Length (1524) X Multiplication Factor (0.00125) X Total FCI	**2.23**	**2.57**	**2.90**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S26-TRIB10-(1b)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S26-TRIB10-(1)	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF):	Hydrologic Subtotal	48	49	51		
1,166	**Hydrologic FCI = Subtotal / 100**	**0.48**	**0.49**	**0.51**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	4	4	4		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	3	4		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	38	45	52		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.48**	**0.56**	**0.65**		
	HB1. Flow Regime	2	2	2		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	5	5	5		
C-7	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	50	60	68		
	Habitat FCI = Subtotal / 120	**0.42**	**0.50**	**0.57**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.37**	**1.55**	**1.73**		
	TOTAL FCU = SAR Length (1166) X Multiplication Factor (0.00125) X Total FCI	**2.00**	**2.26**	**2.52**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S26-TRIB10-A1-(1)	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8
S26-TRIB10-A1-(1)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	39	40	42
748	**Hydrologic FCI = Subtotal / 100**	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	3	3	4
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	32	39	46
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.40**	**0.49**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4
C-7	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.33**	**1.50**
	TOTAL FCU = SAR Length (748) X Multiplication Factor (0.00125) X Total FCI	**1.08**	**1.24**	**1.40**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
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(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB10-A1-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB10-A1-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,634	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	46
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.58**
	HB1. Flow Regime	1	1	1
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.51**
	TOTAL FCU = SAR Length (1634) X Multiplication Factor (0.00125) X Total FCI	**2.37**	**2.76**	**3.08**

MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
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(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB10-A2-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB10-A2-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 349	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	43	53	61		
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.14**	**1.33**	**1.49**		
	TOTAL FCU = SAR Length (349) X Multiplication Factor (0.00125) X Total FCI	**0.50**	**0.58**	**0.65**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB10-A2-TRIBA-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB10-A2-TRIBA-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	1	1	1		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 165	Hydrologic Subtotal	36	37	39		
	Hydrologic FCI = Subtotal / 100	**0.36**	**0.37**	**0.39**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	3	4		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	39	46		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.49**	**0.58**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	2	2	2		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	1	1	1		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	41	51	59		
	Habitat FCI = Subtotal / 120	**0.34**	**0.43**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.10**	**1.28**	**1.46**		
	TOTAL FCU = SAR Length (165) X Multiplication Factor (0.00125) X Total FCI	**0.23**	**0.26**	**0.30**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB11-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	4	5	7
	H2b. Channel Capacity to Flow Frequency	1	4	7
Baseline SAR Name(s): S26-TRIB11-(1)	H2c. Channel Bank Stability *(e)*	4	5	7
	H3a. Channel Sinuosity	3	3	3
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	3	5	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 459	Hydrologic Subtotal	19	26	36
	Hydrologic FCI = Subtotal / 100	**0.19**	**0.26**	**0.36**
	WQ1a. Bank Stability *(e)*	4	5	7
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	5	7	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	22	33	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.28**	**0.41**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	1	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	3	4	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	1	4	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	4	5	7
	HB10. Vegetative Protection *(e)*	5	7	9
	HB11. Riparian Zone *(e)*	1	5	9
	HB12. Riparian Habitat Condition	1	4	7
	Habitat Subtotal	24	40	58
	Habitat FCI = Subtotal / 120	**0.20**	**0.33**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.67**	**1.01**	**1.43**
	TOTAL FCU = SAR Length (459) X Multiplication Factor (0.00125) X Total FCI	**0.38**	**0.58**	**0.82**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
S26-TRIB11-(2)	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	6	7	8		
S26-TRIB11-(2)	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF):	Hydrologic Subtotal	38	39	41		
308	**Hydrologic FCI = Subtotal / 100**	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification	WQ2. Water Clarity	0	0	0		
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	4	5	6		
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	33	41	48		
Restoration	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	4	4	4		
C-7	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.53**		
	TOTAL FCU = SAR Length (308) X Multiplication Factor (0.00125) X Total FCI	**0.45**	**0.52**	**0.59**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB12-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB12-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 378	Hydrologic Subtotal	38	39	41		
	Hydrologic FCI = Subtotal / 100	**0.38**	**0.39**	**0.41**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	5	7		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	41	49		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.51**	**0.61**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-7	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.35**	**1.54**		
	TOTAL FCU = SAR Length (378) X Multiplication Factor (0.00125) X Total FCI	**0.54**	**0.64**	**0.73**		

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB13-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB13-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 1,202	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-8	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	2	2	2
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	43	53	61
	Habitat FCI = Subtotal / 120	**0.36**	**0.44**	**0.51**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.15**	**1.34**	**1.52**
	TOTAL FCU = SAR Length (1202) X Multiplication Factor (0.00125) X Total FCI	**1.73**	**2.01**	**2.28**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB13-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 341	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-8	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (341) X Multiplication Factor (0.00125) X Total FCI	**0.50**	**0.58**	**0.66**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

<table>
<tr><th>STREAM ASSESSMENT REACH (SAR) INFORMATION</th><th>SWAMPIM METRICS (a, b, c, d)</th><th>END OF CONSTRUCTION</th><th>END OF MONITORING</th><th>AT MATURITY</th><th>MITIGATION ACTIVITIES / WORK PERFORMED</th><th>RATIONALE FOR LIFT</th></tr>
<tr><td rowspan="3">Proposed SAR Name:
S26-TRIB13-(3)</td><td>H1. Flow Regime and Groundwater Interaction</td><td>1</td><td>1</td><td>1</td><td rowspan="31">- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management</td><td rowspan="31">- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity</td></tr>
<tr><td>H2a. Channel Condition/ Alteration</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>H2b. Channel Capacity to Flow Frequency</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td rowspan="8">Baseline SAR Name(s):
S26-TRIB13-(3), S26-(6)</td><td>H2c. Channel Bank Stability (e)</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>H3a. Channel Sinuosity</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>H3b. Bottom Substrate Composition</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>H3c. In stream Bottom Topography OR Manning’s n (f)</td><td>2</td><td>2</td><td>3</td></tr>
<tr><td>H3d. Channel Incision</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>H4a. Pools</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>H4b. Channel Flow Status</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Hydrologic Subtotal</td><td>40</td><td>41</td><td>43</td></tr>
<tr><td rowspan="2">Proposed SAR Length (LF):
541</td><td>Hydrologic FCI = Subtotal / 100</td><td>0.40</td><td>0.41</td><td>0.43</td></tr>
<tr><td>WQ1a. Bank Stability (e)</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>Mitigation Zone:
Zone C</td><td>WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition (e, g)</td><td>7</td><td>7</td><td>7</td></tr>
<tr><td rowspan="2">Stream Classification
Ephemeral</td><td>WQ2. Water Clarity</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation (h)</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td rowspan="4">Multiplication Factor (i) :
0.00125</td><td>WQ4. Composition of Organic Matter</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>WQ5. Land Use Pattern Beyond Immediate Riparian Zone (e)</td><td>9</td><td>9</td><td>9</td></tr>
<tr><td>WQ6a. Riparian Zone Width (from stream edge to field) (e)</td><td>5</td><td>7</td><td>9</td></tr>
<tr><td>WQ6b. Riparian Zone Vegetation Protection/Completeness (e)</td><td>2</td><td>6</td><td>9</td></tr>
<tr><td rowspan="3">Mitigation Design Type:
Restoration</td><td>Water Quality / Biogeochemical Subtotal</td><td>32</td><td>40</td><td>47</td></tr>
<tr><td>Water Quality / Biogeochemical FCI = Subtotal / 80</td><td>0.40</td><td>0.50</td><td>0.59</td></tr>
<tr><td>HB1. Flow Regime</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td rowspan="17">Reference Figure:
C-7</td><td>HB2. Epifaunal Substrate and Available Cover</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB3. Stream Bottom Substrate</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>HB4. Pool Variability</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>HB5. Sediment Deposition and Scouring</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>HB6. Channel Flow Status</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>HB7. Channel Alteration</td><td>8</td><td>8</td><td>8</td></tr>
<tr><td>HB8. Channel Sinuosity</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>HB9. Bank Stability (e)</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>HB10. Vegetative Protection (e)</td><td>2</td><td>6</td><td>9</td></tr>
<tr><td>HB11. Riparian Zone (e)</td><td>5</td><td>7</td><td>9</td></tr>
<tr><td>HB12. Riparian Habitat Condition</td><td>2</td><td>5</td><td>7</td></tr>
<tr><td>Habitat Subtotal</td><td>44</td><td>54</td><td>62</td></tr>
<tr><td>Habitat FCI = Subtotal / 120</td><td>0.37</td><td>0.45</td><td>0.52</td></tr>
<tr><td>TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI</td><td>1.17</td><td>1.36</td><td>1.53</td></tr>
<tr><td>TOTAL FCU = SAR Length (541) X Multiplication Factor (0.00125) X Total FCI</td><td>0.79</td><td>0.92</td><td>1.03</td></tr>
</table>

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) “H” = Hydrologic Functions; “WQ” = Water Quality / Biogeochemical Functions; “HB” = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning’s N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB14-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB14-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 1,076	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-8	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (1076) X Multiplication Factor (0.00125) X Total FCI	**1.57**	**1.83**	**2.07**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
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(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name:	H1. Flow Regime and Groundwater Interaction	1	1	1
S26-TRIB15-(1)	H2a. Channel Condition/ Alteration	3	5	7
	H2b. Channel Capacity to Flow Frequency	6	6	7
Baseline SAR Name(s):	H2c. Channel Bank Stability *(e)*	3	5	7
S26-TRIB15-(1)	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	6	6	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF):	Hydrologic Subtotal	26	30	37
152	**Hydrologic FCI = Subtotal / 100**	**0.26**	**0.30**	**0.37**
	WQ1a. Bank Stability *(e)*	3	5	7
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7
Stream Classification	WQ2. Water Clarity	0	0	0
Ephemeral	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* :	WQ4. Composition of Organic Matter	2	4	6
0.00125	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	1	5	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	5	9
Mitigation Design Type:	Water Quality / Biogeochemical Subtotal	17	31	47
Enhancement	**Water Quality / Biogeochemical FCI = Subtotal / 80**	**0.21**	**0.39**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure:	HB2. Epifaunal Substrate and Available Cover	1	2	3
C-11	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	1	3	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	1	4	7
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	3	5	7
	HB10. Vegetative Protection *(e)*	2	5	9
	HB11. Riparian Zone *(e)*	1	5	9
	HB12. Riparian Habitat Condition	3	5	7
	Habitat Subtotal	20	38	58
	Habitat FCI = Subtotal / 120	**0.17**	**0.32**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.64**	**1.00**	**1.44**
	TOTAL FCU = SAR Length (152) X Multiplication Factor (0.00125) X Total FCI	**0.12**	**0.19**	**0.27**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB15-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB15-(2)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 976	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	3	4	5		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.52**		
	TOTAL FCU = SAR Length (976) X Multiplication Factor (0.00125) X Total FCI	**1.42**	**1.65**	**1.85**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB15-(3)	H1. Flow Regime and Groundwater Interaction	2	2	2	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): N/A	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	6	6	6		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	4	4	4		
	H4b. Channel Flow Status	4	4	4		
Proposed SAR Length (LF): 931	Hydrologic Subtotal	50	51	53		
	Hydrologic FCI = Subtotal / 100	**0.50**	**0.51**	**0.53**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Re-Establishment	Water Quality / Biogeochemical Subtotal	39	47	54		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**		
	HB1. Flow Regime	2	2	2		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	5	5	5		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	7	7	7		
	HB6. Channel Flow Status	4	4	4		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	51	61	69		
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.41**	**1.61**	**1.78**		
	TOTAL FCU = SAR Length (931) X Multiplication Factor (0.00125) X Total FCI	**1.64**	**1.87**	**2.07**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB16-(4)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB16-(4)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	5	5	5		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 176	Hydrologic Subtotal	40	41	43		
	Hydrologic FCI = Subtotal / 100	**0.40**	**0.41**	**0.43**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	5	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	34	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.43**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	4	4	4	*Notes:* *(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.* *(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.* *(c) FCI = Functional Condition Index.* *(d) FCU = Functional Capacity Unit.* *(e) Score shown is the average of the left and right bank scores.* *(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.* *(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.* *(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.* *(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.*	
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.19**	**1.37**	**1.55**		
	TOTAL FCU = SAR Length (176) X Multiplication Factor (0.00125) X Total FCI	**0.26**	**0.30**	**0.34**		

<table>
<tr><th>STREAM ASSESSMENT REACH (SAR) INFORMATION</th><th>SWAMPIM METRICS (a, b, c, d)</th><th>END OF CONSTRUCTION</th><th>END OF MONITORING</th><th>AT MATURITY</th><th>MITIGATION ACTIVITIES / WORK PERFORMED</th><th>RATIONALE FOR LIFT</th></tr>
<tr><td rowspan="3">Proposed SAR Name:
S26-TRIB16-(5)</td><td>H1. Flow Regime and Groundwater Interaction</td><td>1</td><td>1</td><td>1</td><td rowspan="31">- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management</td><td rowspan="31">- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity</td></tr>
<tr><td>H2a. Channel Condition/ Alteration</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>H2b. Channel Capacity to Flow Frequency</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td rowspan="8">Baseline SAR Name(s):
S26-TRIB16-(5)</td><td>H2c. Channel Bank Stability (e)</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>H3a. Channel Sinuosity</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>H3b. Bottom Substrate Composition</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>H3c. In stream Bottom Topography OR Manning's n (f)</td><td>2</td><td>2</td><td>3</td></tr>
<tr><td>H3d. Channel Incision</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>H4a. Pools</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>H4b. Channel Flow Status</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Hydrologic Subtotal</td><td>11</td><td>23</td><td>36</td></tr>
<tr><td rowspan="2">Proposed SAR Length (LF):
600</td><td>Hydrologic FCI = Subtotal / 100</td><td>0.11</td><td>0.23</td><td>0.36</td></tr>
<tr><td>WQ1a. Bank Stability (e)</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>Mitigation Zone:
Zone C</td><td>WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition (e, g)</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td rowspan="2">Stream Classification
Ephemeral</td><td>WQ2. Water Clarity</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation (h)</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td rowspan="4">Multiplication Factor (i) :
0.00125</td><td>WQ4. Composition of Organic Matter</td><td>1</td><td>3</td><td>6</td></tr>
<tr><td>WQ5. Land Use Pattern Beyond Immediate Riparian Zone (e)</td><td>5</td><td>7</td><td>9</td></tr>
<tr><td>WQ6a. Riparian Zone Width (from stream edge to field) (e)</td><td>8</td><td>8</td><td>9</td></tr>
<tr><td>WQ6b. Riparian Zone Vegetation Protection/Completeness (e)</td><td>1</td><td>5</td><td>9</td></tr>
<tr><td rowspan="3">Mitigation Design Type:
Enhancement</td><td>Water Quality / Biogeochemical Subtotal</td><td>17</td><td>31</td><td>47</td></tr>
<tr><td>Water Quality / Biogeochemical FCI = Subtotal / 80</td><td>0.21</td><td>0.39</td><td>0.59</td></tr>
<tr><td>HB1. Flow Regime</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td rowspan="16">Reference Figure:
C-11</td><td>HB2. Epifaunal Substrate and Available Cover</td><td>2</td><td>2</td><td>3</td></tr>
<tr><td>HB3. Stream Bottom Substrate</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>HB4. Pool Variability</td><td>1</td><td>2</td><td>3</td></tr>
<tr><td>HB5. Sediment Deposition and Scouring</td><td>1</td><td>3</td><td>6</td></tr>
<tr><td>HB6. Channel Flow Status</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>HB7. Channel Alteration</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>HB8. Channel Sinuosity</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>HB9. Bank Stability (e)</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>HB10. Vegetative Protection (e)</td><td>1</td><td>5</td><td>9</td></tr>
<tr><td>HB11. Riparian Zone (e)</td><td>8</td><td>8</td><td>9</td></tr>
<tr><td>HB12. Riparian Habitat Condition</td><td>3</td><td>5</td><td>7</td></tr>
<tr><td>Habitat Subtotal</td><td>25</td><td>40</td><td>58</td></tr>
<tr><td>Habitat FCI = Subtotal / 120</td><td>0.21</td><td>0.33</td><td>0.48</td></tr>
<tr><td>TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI</td><td>0.53</td><td>0.95</td><td>1.43</td></tr>
<tr><td>TOTAL FCU = SAR Length (600) X Multiplication Factor (0.00125) X Total FCI</td><td>0.40</td><td>0.71</td><td>1.07</td></tr>
</table>

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
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(d) FCU = Functional Capacity Unit.
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STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB16-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB16-A1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 596	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (596) X Multiplication Factor (0.00125) X Total FCI	**0.87**	**1.01**	**1.15**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB17-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	5	6	7		
	H2b. Channel Capacity to Flow Frequency	4	5	7		
Baseline SAR Name(s): S26-TRIB17-(1)	H2c. Channel Bank Stability *(e)*	5	6	7		
	H3a. Channel Sinuosity	3	3	3		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	4	5	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 252	Hydrologic Subtotal	25	29	36		
	Hydrologic FCI = Subtotal / 100	**0.25**	**0.29**	**0.36**		
	WQ1a. Bank Stability *(e)*	5	6	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	5	6	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	5	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	32	38	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.48**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	2	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	4	5	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	4	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	5	6	7		
	HB10. Vegetative Protection *(e)*	4	6	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	8	8	8		
	Habitat Subtotal	43	49	59		
	Habitat FCI = Subtotal / 120	**0.36**	**0.41**	**0.49**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.01**	**1.17**	**1.44**		
	TOTAL FCU = SAR Length (252) X Multiplication Factor (0.00125) X Total FCI	**0.32**	**0.37**	**0.45**		

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB17-(2)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	2	4	7
	H2b. Channel Capacity to Flow Frequency	1	4	7
Baseline SAR Name(s): S26-TRIB17-(2)	H2c. Channel Bank Stability *(e)*	2	4	7
	H3a. Channel Sinuosity	1	1	1
	H3b. Bottom Substrate Composition	1	1	1
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	1	4	7
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 120	Hydrologic Subtotal	11	21	34
	Hydrologic FCI = Subtotal / 100	**0.11**	**0.21**	**0.34**
	WQ1a. Bank Stability *(e)*	2	4	7
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	2	4	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	6	6	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	4	6	9
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	27	35	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.34**	**0.44**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	2	2	3
	HB3. Stream Bottom Substrate	3	3	3
	HB4. Pool Variability	1	2	3
	HB5. Sediment Deposition and Scouring	3	4	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	4	5	7
	HB8. Channel Sinuosity	1	1	1
	HB9. Bank Stability *(e)*	2	4	7
	HB10. Vegetative Protection *(e)*	4	6	9
	HB11. Riparian Zone *(e)*	8	8	9
	HB12. Riparian Habitat Condition	8	8	8
	Habitat Subtotal	37	44	57
	Habitat FCI = Subtotal / 120	**0.31**	**0.37**	**0.48**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.76**	**1.01**	**1.40**
	TOTAL FCU = SAR Length (120) X Multiplication Factor (0.00125) X Total FCI	**0.11**	**0.15**	**0.21**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB17-(3)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	4	5	7		
	H2b. Channel Capacity to Flow Frequency	2	4	7		
Baseline SAR Name(s): S26-TRIB17-(3)	H2c. Channel Bank Stability *(e)*	4	5	7		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	1	1	1		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	2	4	7		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 134	Hydrologic Subtotal	20	26	37		
	Hydrologic FCI = Subtotal / 100	**0.20**	**0.26**	**0.37**		
	WQ1a. Bank Stability *(e)*	4	5	7		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	4	5	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	7	7	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	5	7	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	8	8	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	5	9		
Mitigation Design Type: Enhancement	Water Quality / Biogeochemical Subtotal	30	37	47		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.38**	**0.46**	**0.59**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	2	2	3		
	HB3. Stream Bottom Substrate	3	3	3		
	HB4. Pool Variability	1	2	3		
	HB5. Sediment Deposition and Scouring	3	4	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	3	5	7		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	4	5	7		
	HB10. Vegetative Protection *(e)*	2	5	9		
	HB11. Riparian Zone *(e)*	8	8	9		
	HB12. Riparian Habitat Condition	5	6	7		
	Habitat Subtotal	35	44	58		
	Habitat FCI = Subtotal / 120	**0.29**	**0.37**	**0.48**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**0.87**	**1.09**	**1.44**		
	TOTAL FCU = SAR Length (134) X Multiplication Factor (0.00125) X Total FCI	**0.15**	**0.18**	**0.24**		

Notes:
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(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY	MITIGATION ACTIVITIES / WORK PERFORMED	RATIONALE FOR LIFT
Proposed SAR Name: S26-TRIB18-(5)	H1. Flow Regime and Groundwater Interaction	1	1	1	- Protection within large contiguous mititgation area - Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement - Supplemental plantings of native trees, shrubs, and herbaceous species - Use of large woody debris (LWD) or other native material for in-channel structures - Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate - Creation of pools in combination with LWD and GCS and other locations where appropriate - Creation of riparian buffer zones around channel (minimum of 60' width on each side) - Creation of protected natural area adjacent to riparian buffer zone - Monitoring and management	- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency) - LWD will increase channel roughness and improve bank stability - Created pools will retain water - Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality - Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity
	H2a. Channel Condition/ Alteration	8	8	8		
	H2b. Channel Capacity to Flow Frequency	8	8	8		
Baseline SAR Name(s): S26-TRIB18-(5)	H2c. Channel Bank Stability *(e)*	6	7	8		
	H3a. Channel Sinuosity	4	4	4		
	H3b. Bottom Substrate Composition	2	2	2		
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3		
	H3d. Channel Incision	8	8	8		
	H4a. Pools	0	0	0		
	H4b. Channel Flow Status	0	0	0		
Proposed SAR Length (LF): 542	Hydrologic Subtotal	39	40	42		
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**		
	WQ1a. Bank Stability *(e)*	6	7	8		
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7		
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0		
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0		
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6		
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9		
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9		
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9		
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	33	41	48		
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.41**	**0.51**	**0.60**		
	HB1. Flow Regime	1	1	1		
Reference Figure: C-11	HB2. Epifaunal Substrate and Available Cover	4	4	4		
	HB3. Stream Bottom Substrate	4	4	4		
	HB4. Pool Variability	3	3	3		
	HB5. Sediment Deposition and Scouring	6	6	6		
	HB6. Channel Flow Status	0	0	0		
	HB7. Channel Alteration	8	8	8		
	HB8. Channel Sinuosity	3	3	3		
	HB9. Bank Stability *(e)*	6	7	8		
	HB10. Vegetative Protection *(e)*	2	6	9		
	HB11. Riparian Zone *(e)*	5	7	9		
	HB12. Riparian Habitat Condition	2	5	7		
	Habitat Subtotal	44	54	62		
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**		
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.17**	**1.36**	**1.54**		
	TOTAL FCU = SAR Length (542) X Multiplication Factor (0.00125) X Total FCI	**0.79**	**0.92**	**1.04**		

Notes:
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(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB19-(2)	H1. Flow Regime and Groundwater Interaction	2	2	2
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB19-(2)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	5	5	5
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	4	4	4
	H4b. Channel Flow Status	4	4	4
Proposed SAR Length (LF): 794	Hydrologic Subtotal	49	50	52
	Hydrologic FCI = Subtotal / 100	**0.49**	**0.50**	**0.52**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	4	4	4
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	2	2	2
Multiplication Factor *(i)* : 0.00125	WQ4. Composition of Organic Matter	4	5	6
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	39	47	54
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.49**	**0.59**	**0.68**
	HB1. Flow Regime	2	2	2
Reference Figure: C-14	HB2. Epifaunal Substrate and Available Cover	5	5	5
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	7	7	7
	HB6. Channel Flow Status	4	4	4
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	51	61	69
	Habitat FCI = Subtotal / 120	**0.43**	**0.51**	**0.58**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.40**	**1.60**	**1.77**
	TOTAL FCU = SAR Length (794) X Multiplication Factor (0.00125) X Total FCI	**1.39**	**1.59**	**1.76**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
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(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
(h) Nutrient Enrichment was used globally for scoring because Aquatic Vegetation does not provide an accurate representation of ephemeral stream channel condition within the Lake Ralph Hall project watershed.
(i) The Multiplication Factor is determined by the stream's flow regime; the multiplication factors for Perennial, Intermittent with Perennial Pools, Intermittent, and Ephemeral Streams are 0.0038, 0.00315, 0.0025, and 0.00125, respectively.

STREAM ASSESSMENT REACH (SAR) INFORMATION	SWAMPIM METRICS *(a, b, c, d)*	END OF CONSTRUCTION	END OF MONITORING	AT MATURITY
Proposed SAR Name: S26-TRIB19-A1-(1)	H1. Flow Regime and Groundwater Interaction	1	1	1
	H2a. Channel Condition/ Alteration	8	8	8
	H2b. Channel Capacity to Flow Frequency	8	8	8
Baseline SAR Name(s): S26-TRIB19-A1-(1)	H2c. Channel Bank Stability *(e)*	6	7	8
	H3a. Channel Sinuosity	4	4	4
	H3b. Bottom Substrate Composition	2	2	2
	H3c. In stream Bottom Topography OR Manning's n *(f)*	2	2	3
	H3d. Channel Incision	8	8	8
	H4a. Pools	0	0	0
	H4b. Channel Flow Status	0	0	0
Proposed SAR Length (LF): 173	Hydrologic Subtotal	39	40	42
	Hydrologic FCI = Subtotal / 100	**0.39**	**0.40**	**0.42**
	WQ1a. Bank Stability *(e)*	6	7	8
Mitigation Zone: Zone C	WQ1b. Channel Bottom Bank Stability OR Channel Sediments or Substrate Composition *(e, g)*	7	7	7
Stream Classification Ephemeral	WQ2. Water Clarity	0	0	0
	WQ3. Nutrient Enrichment OR Presence of Aquatic Vegetation *(h)*	0	0	0
Multiplication Factor *(i)*: 0.00125	WQ4. Composition of Organic Matter	3	4	5
	WQ5. Land Use Pattern Beyond Immediate Riparian Zone *(e)*	9	9	9
	WQ6a. Riparian Zone Width (from stream edge to field) *(e)*	5	7	9
	WQ6b. Riparian Zone Vegetation Protection/Completeness *(e)*	2	6	9
Mitigation Design Type: Restoration	Water Quality / Biogeochemical Subtotal	32	40	47
	Water Quality / Biogeochemical FCI = Subtotal / 80	**0.40**	**0.50**	**0.59**
	HB1. Flow Regime	1	1	1
Reference Figure: C-14	HB2. Epifaunal Substrate and Available Cover	4	4	4
	HB3. Stream Bottom Substrate	4	4	4
	HB4. Pool Variability	3	3	3
	HB5. Sediment Deposition and Scouring	6	6	6
	HB6. Channel Flow Status	0	0	0
	HB7. Channel Alteration	8	8	8
	HB8. Channel Sinuosity	3	3	3
	HB9. Bank Stability *(e)*	6	7	8
	HB10. Vegetative Protection *(e)*	2	6	9
	HB11. Riparian Zone *(e)*	5	7	9
	HB12. Riparian Habitat Condition	2	5	7
	Habitat Subtotal	44	54	62
	Habitat FCI = Subtotal / 120	**0.37**	**0.45**	**0.52**
	TOTAL FCI = Hydrologic FCI + Water Quality / Biogeochemical FCI + Habitat FCI	**1.16**	**1.35**	**1.52**
	TOTAL FCU = SAR Length (173) X Multiplication Factor (0.00125) X Total FCI	**0.25**	**0.29**	**0.33**

MITIGATION ACTIVITIES / WORK PERFORMED

- Protection within large contiguous mititgation area
- Implementation of measures to prevent uncontrolled access (cattle, etc.) from outside conservation easement
- Supplemental plantings of native trees, shrubs, and herbaceous species
- Use of large woody debris (LWD) or other native material for in-channel structures
- Adjustment of channel gradient by installing grade control structures (GCS) made from native material (rock or woody debris) where appropriate
- Creation of pools in combination with LWD and GCS and other locations where appropriate
- Creation of riparian buffer zones around channel (minimum of 60' width on each side)
- Creation of protected natural area adjacent to riparian buffer zone
- Monitoring and management

RATIONALE FOR LIFT

- GCS will reduce channel downcutting and improve stream stability, sediment transport, and floodplain connectivity (through increased overbank frequency)
- LWD will increase channel roughness and improve bank stability
- Created pools will retain water
- Protection, plantings, and measures to prevent uncontrolled access will improve bank stability, filter runoff, and enhance water quality
- Woody debris, leaf litter, and overhanging herbaceous vegetation from established buffer zones will enhance in-stream habitat and biological productivity

Notes:
(a) Refer to SWAMPIM Assessment Protocol Documentation (included in Appendix C of Mitigation Plan) for scoring methodology.
(b) "H" = Hydrologic Functions; "WQ" = Water Quality / Biogeochemical Functions; "HB" = Habitat Functions.
(c) FCI = Functional Condition Index.
(d) FCU = Functional Capacity Unit.
(e) Score shown is the average of the left and right bank scores.
(f) Instream bottom topography was globally used in lieu of Manning's N as it allows for a visual assessment of the stream reach.
(g) Channel Bottom Bank Stability was used globally instead of Channel Sediment/Substrate Composition because it more accurately represents the channel condition within the Lake Ralph Hall project watershed.
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