

Trinity River Corridor Project Update

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®

US Army Corps of Engineers
BUILDING STRONG®



Fort Worth District

U.S. Army Corps of Engineers

Who we are:

- Created 1950 after 1949 Fort Worth flood
- 1,000 civilian and military employees – half in Fort Worth

What we do:

Military Works: Support the needs of 11 Army and 5 Air Force installations across Texas, New Mexico and Louisiana

Civil Works: Ten river basins covering 53% of the state

- Levee systems in some 16 Texas counties
- 25 lakes containing 314 parks
- Corps lakes provide 30% of Texas water supply
- 35 current ecosystem restoration projects

Overseas contingency response: 21 employees deployed to Afghanistan in October

Emergency response: District employees deploy nationwide for disaster relief (Superstorm Sandy)



Fort Worth District Mission Areas



Trinity River Corridor

Government Partners

Complex projects with many participants, many responsibilities and a shared goal that **LIFE SAFETY IS PRIORITY NO. 1.**

- Corps of Engineers
- City of Dallas
- Dallas County
- North Texas Tollway Authority
- Texas Dept. of Transportation
- Fed. Highway Administration
- EPA
- FEMA
- Texas Commission on Environmental Quality
- North Central Texas Council of Governments



Trinity River Corridor Project

Non-Profit Partners

- Trinity Trust Foundation
- Trinity Commons Foundation
- Audubon Society
- Circle Ten Boy Scouts
- Dallas Camera Club
- Dallas Running Club
- Downtown Dallas
- EQUEST
- Groundwork Dallas
- Girl Scouts of Northeast Texas
- River Ranch Education Charities
- Ocean Conservancy
- Scottish Rite Hospital
- Student Conservation Association
- Texas Horse Park Foundation
- Trinity Bird Count
- Trinity Strand Trail
- The Mission Continues



Trinity River Corridor Project

Private Sector Partners

- AT&T
- CVS Caremark
- Dallas Morning News
- Dr. Pepper/Snapple
- National Fish & Wildlife/FedEx
- Hilton Anatole
- Kroger
- Luke's Locker
- Matthews Southwest
- Methodist Hospital Dallas
- Nestle Waters
- NorthPark Center
- Oncor
- Reliant Energy
- Sprint
- Southwest Airlines
- Xerox
- Wells Fargo



Overview

The Trinity River Corridor projects address regional concerns but **flood risk reduction** is the cornerstone.

4 inter-related components of the projects are:

- I. Flood Risk Reduction
- II. Ecosystem Restoration
- III. Transportation
- IV. Recreation

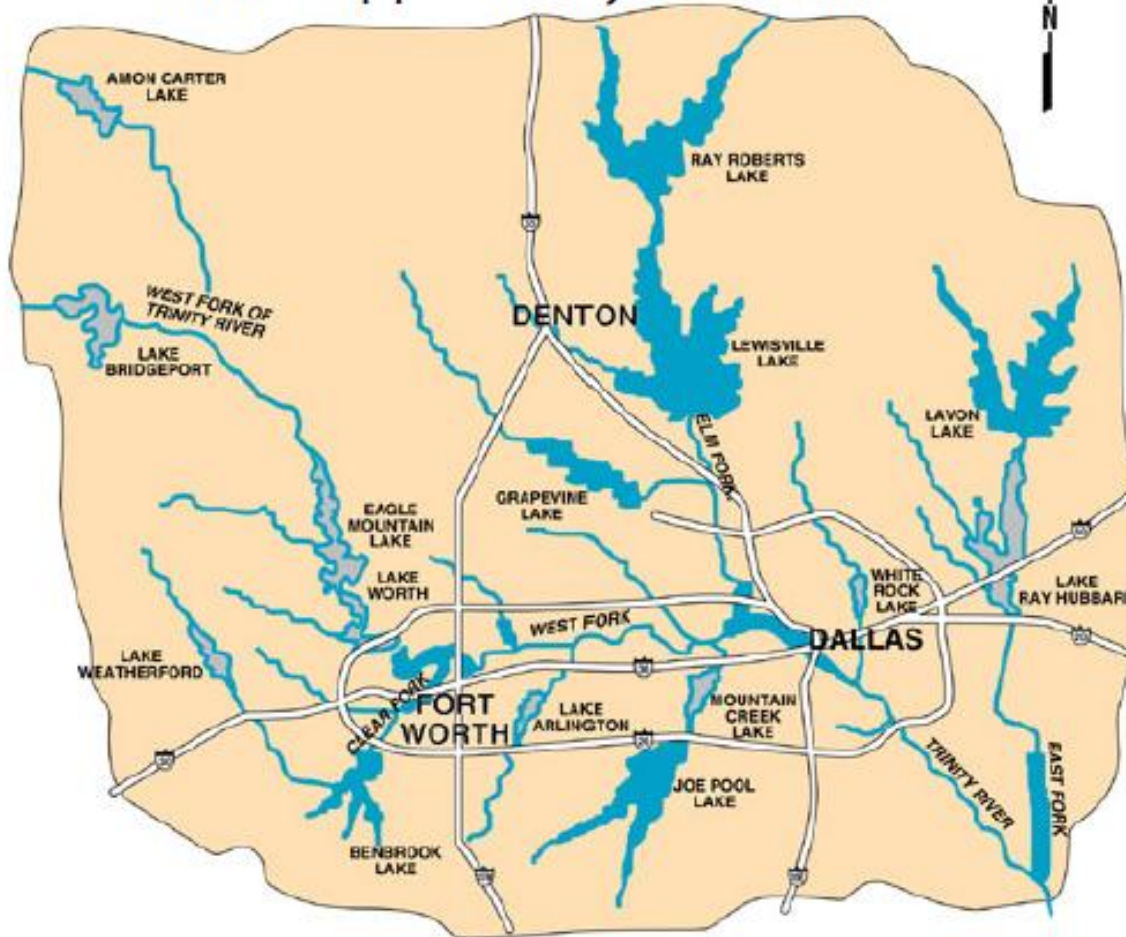
I. Flood Risk Reduction

- 200,000 people work or live behind the levees
- \$12.2 billion in floodplain investment



Flood Risk Reduction

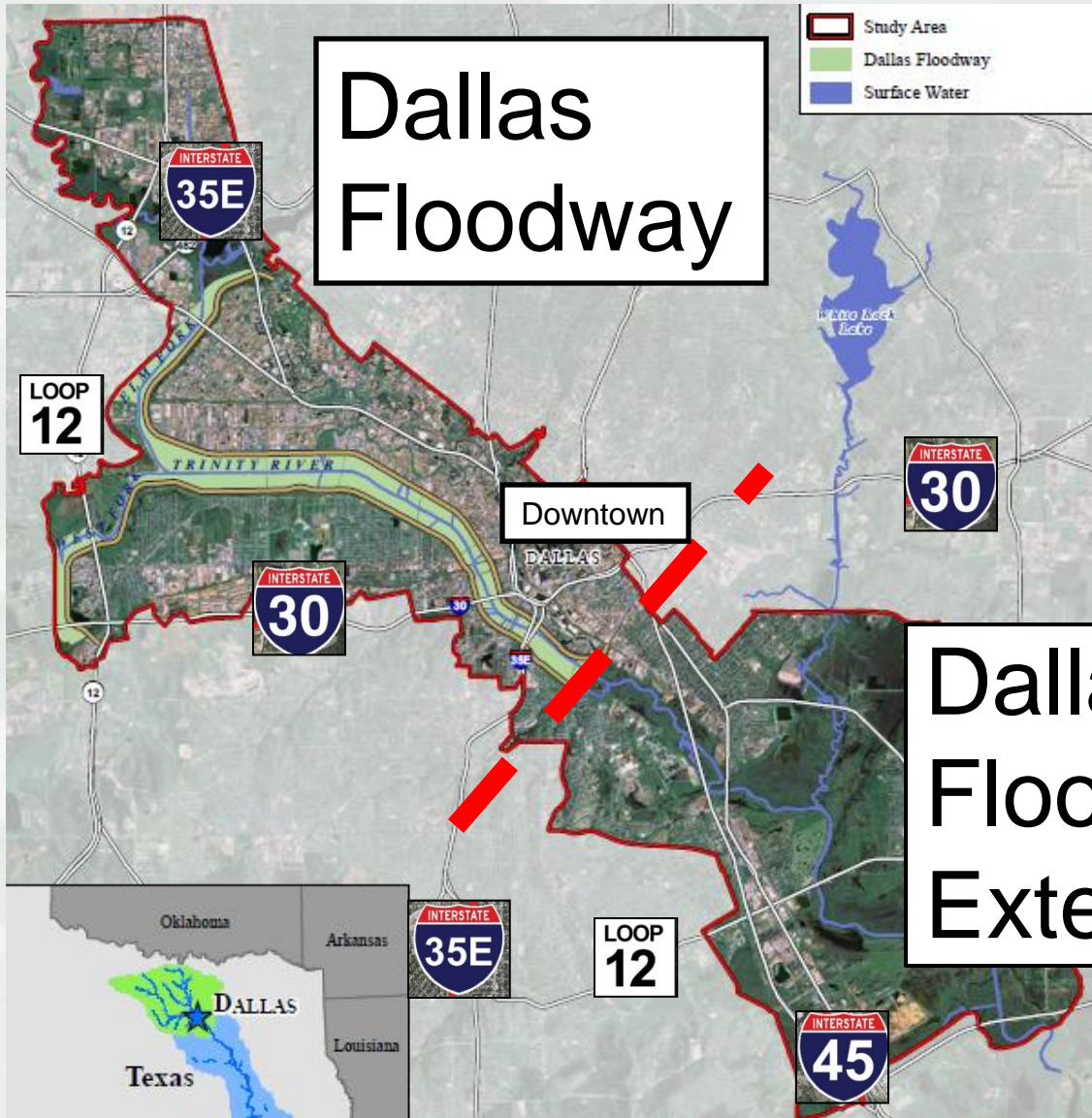
Location of major water resources
in the Upper Trinity River Basin



Corps Lakes provide flood risk reduction, water supply and recreation

- Benbrook
- Grapevine
- Lavon
- Lewisville
- Joe Pool
- Ray Roberts

Flood Risk Reduction



Dallas
Floodway

Two Corps of
Engineers
projects

Dallas
Floodway
Extension

Flood Risk Reduction History

- **1908 – Dallas flood kills 5**, leaves 4,000 homeless, city without power for days, massive property damage
- **1928 – First levee system built in Dallas**



**Montgomery
Ward building,
1949 Fort
Worth flood**

- **1949 – Fort Worth flood kills 11**, flood control reservoir construction advances (Lewisville, Grapevine, Benbrook)
- **1958 – Corps completes major Dallas Floodway upgrade**
- **1989-1991 – Worst floods since 1908.**
- **1998 – Dallas voters authorize record bond package – \$246 million – for Trinity flood control, transportation and recreation.**

Flood Risk Reduction

Dallas Floodway Project

- **2007 – Water Resources Development Act (WRDA) Section 5141** was authorized to raise the levees up to 2 feet, provide recreation (Balanced Vision Plan) and improve pump stations
- **2009 – Corps tells City it has rated Dallas Floodway “unacceptable”**; FEMA withdraws accreditation of levees; city begins maintenance and construction work to re-certify levees
- **2010 – Feasibility Study and Environmental Impact Statement** process launched to explore what actions are needed to restore capacity of Dallas Floodway to meet a major storm event.
- **2011 – Corps introduces Risk Assessment** process, a cost-effective method for assessing aging dams, to the Dallas Floodway Project.

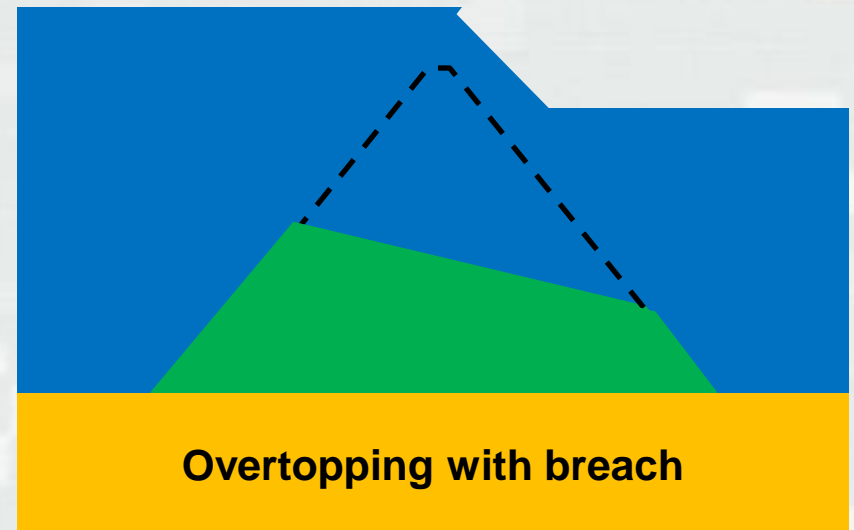
Flood Risk Reduction

The Risk Assessment Process

- Method for quantifying the risk (likelihood) of various ways a levee can fail, and the consequences of each failure type
- Identifies most cost-effective ways to reduce risk

Successful result:

- Determined levees more resilient than previously thought
- Narrowed the list of 13 potential failure modes to two:
 - Overtopping with breach of East or West Levee
 - Overtopping of the East Levee floodwall



Flood Risk Reduction

Recommended Flood Risk Management Plan

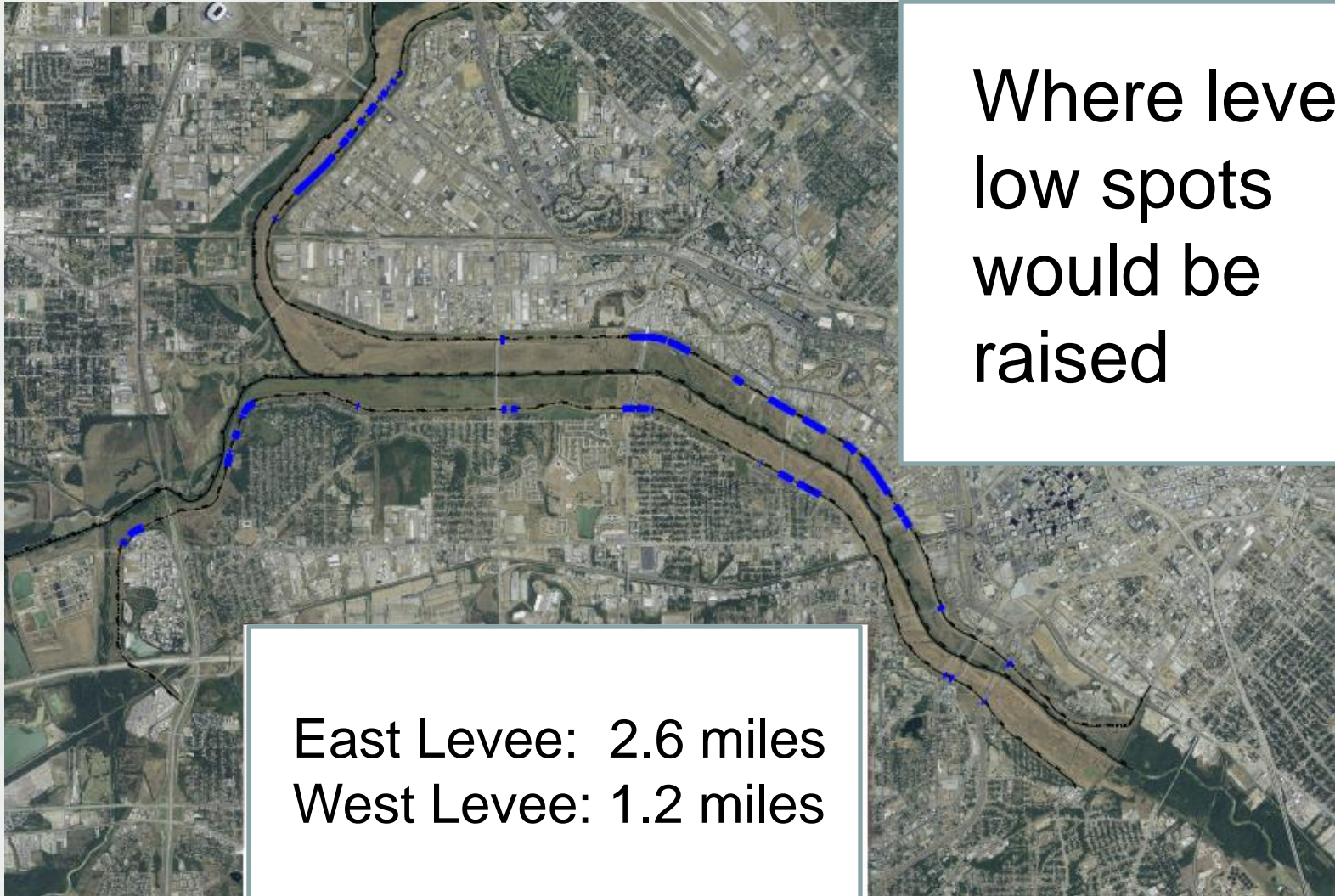


- **Modify abandoned AT&SF Bridge** to remove earthen embankments and most piers that collect debris and back up floodwaters

- **Raise low spots in the levees** up to 3 feet to increase flood conveyance to 277,000 cubic feet per second. This is enough to convey floodwaters of a major storm that has a 1/2,500 chance of happening in any given year
- **Cost of these two changes: \$6.2 million**

Path forward: Use Risk Assessment to ensure Recommended Plan, Balance Vision Plan, Interior Drainage Plan, Trinity Parkway and other local features work together within confines of the Floodway System.

Flood Risk Reduction

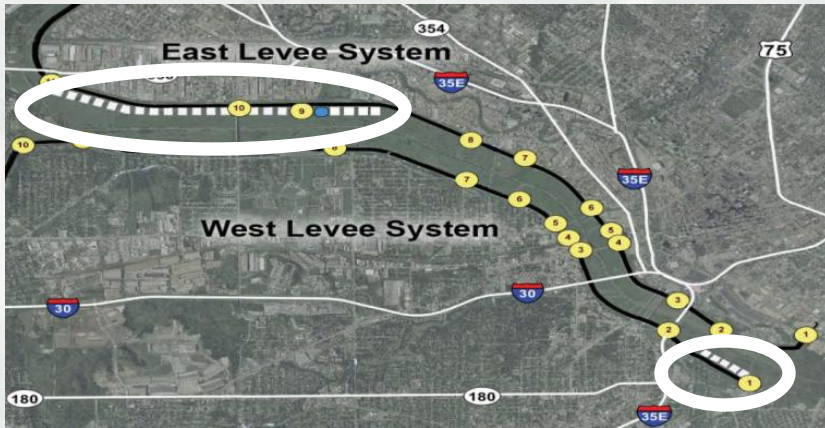


Where levee
low spots
would be
raised

East Levee: 2.6 miles
West Levee: 1.2 miles

Flood Risk Reduction

City to certify levees

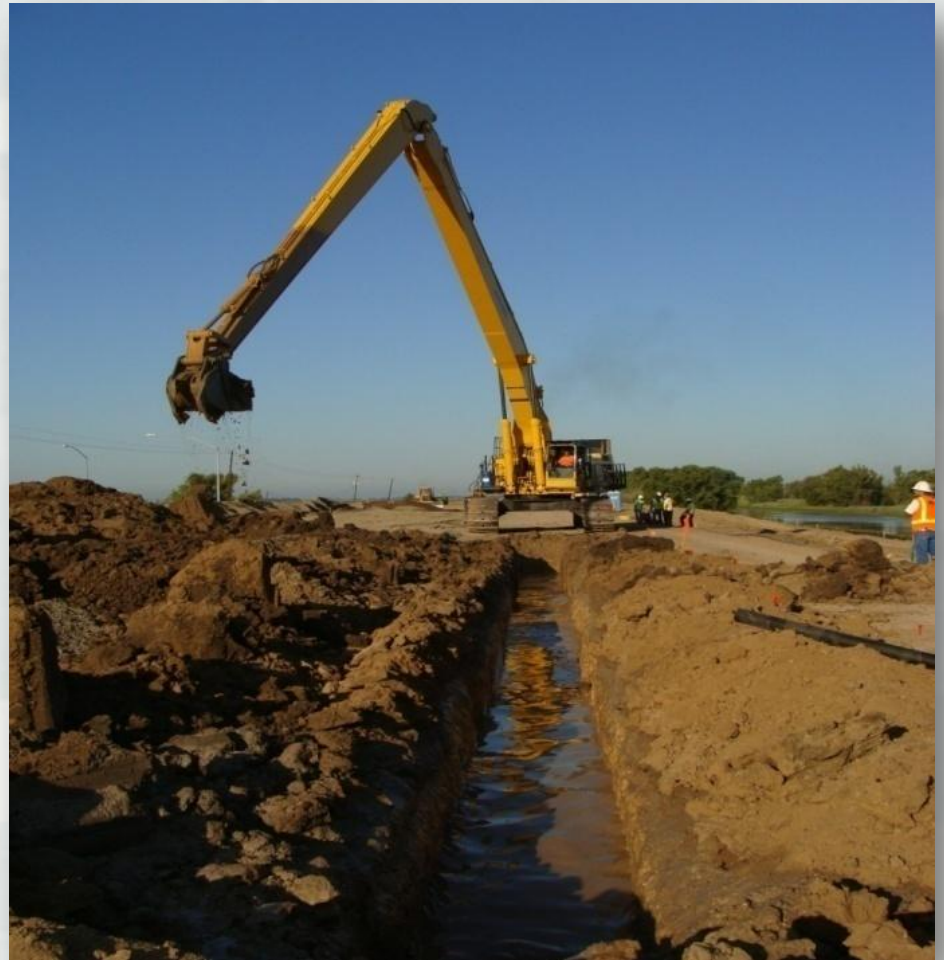


3.5 miles of new anti-seepage walls built to meet FEMA's National Flood Insurance Program at the 100-year flood protection level requirements

Milestones

Construction completed this year

2013 – City gathering certification documentation to be sent to FEMA seeking reaccreditation for levees



Flood Risk Reduction

Interior Drainage Plan

Expanding pump stations, such as Pavaho (completed last year), reduces neighborhood flooding. This West Dallas neighborhood regularly flooded before upgrade.



2006 flooding near
Old Pavaho Pump Station



2012 New Pavaho Pump Station

Flood Risk Reduction

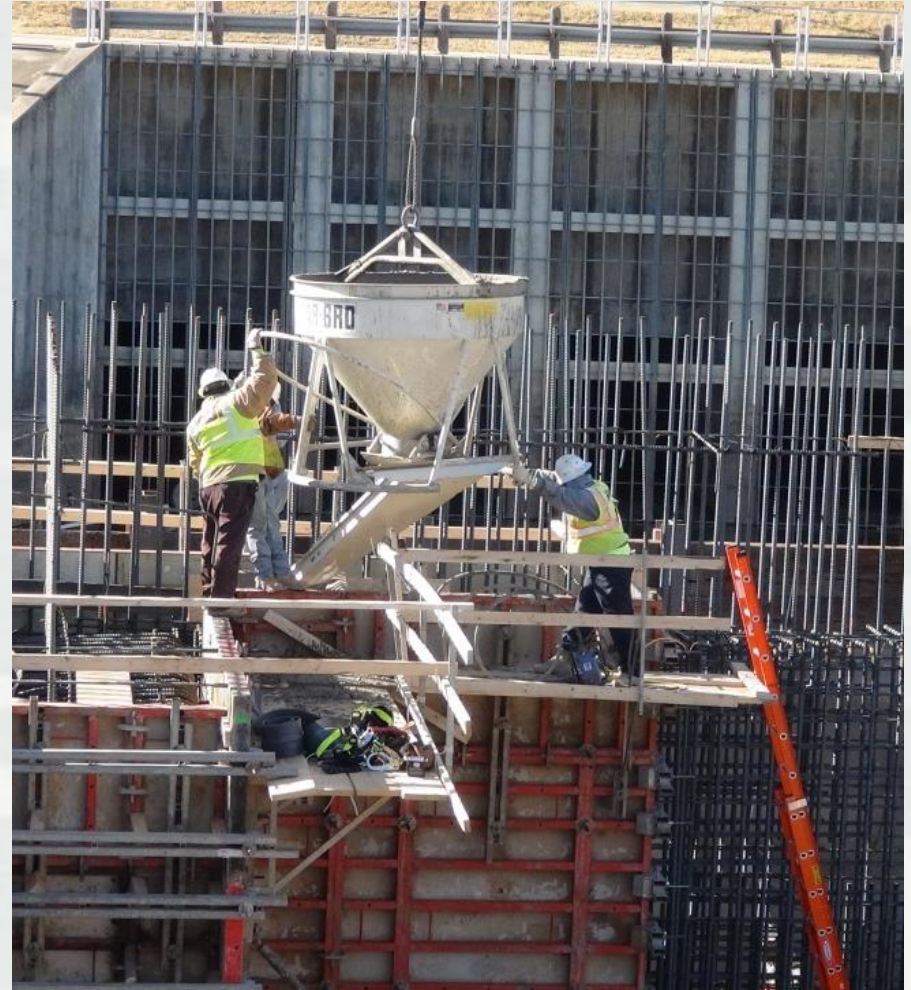
Interior Drainage Plan

More pump stations under way

- **Baker Pump Station** (2255 Irving Blvd. near Design District); construction now 58 percent complete



- **Able Pump Station** (600 S. Riverfront near Fuel City) – Under design. Construction to begin within a year.



Flood Risk Reduction

Dallas Floodway Extension Project

- Project initiated in 2001 to construct flood control wetlands and levees
- Constructed Lower Chain of Wetlands
- Lamar Levee geotechnical borings completed
- Lamar Levee 35 percent designed



Flood Risk Reduction

Fiscal Year 2014 Next Steps

- Brief the Transportation and Trinity River Project Council Committee on the Dallas Floodway Project Environmental Impact Statement and the upcoming 2014 Public Meeting
- Award contracts for the Upper Chain of Wetlands and Able Pump Station
- Open Baker Pump Station

II. Ecosystem Restoration

Lower Chain of Wetlands have dual role: New wildlife habitat in the heart of the city that also reduces flood risk in the Dallas Floodway

Fed by treated wastewater, the Lower Chain of Wetlands thrive through drought and further clean water before it flows back into Trinity River



- I. Flood Risk Reduction
- **II. Ecosystem Restoration**
- III. Transportation
- IV. Recreation

Ecosystem Restoration



Lower Chain of Wetlands highlights

- Native plants selected to maximize food supplies for birds
- Water levels adjusted to attract seasonal waterfowl
- 125 bird species recorded in Lower Chain of Wetlands by Trinity Bird Count



Ecosystem Restoration

Path Forward: More wetlands

Upper Chain of Wetlands (MLK Jr. Bridge/11th St., Phase 1 construction complete; Phase 2 starts early 2014



Pavaho Storm Water Wetlands – award contract December 2013

Ecosystem Restoration

Tire Removal, Planting and Cleanup Activities

- Staff, contracts and volunteer programs such as Groundwork Dallas and Southwest Airlines Trinity Conservation Corps aim to remove tires and trash in and along the Trinity
- Staff, contracts and volunteer programs plant native species vegetation



Ecosystem Restoration

Fiscal Year 2014 Next Steps

- Brief the Transportation and Trinity River Project Council Committee on the operations and maintenance for the Lower Chain of Wetlands
- Award the construction contact for the Upper Chain of Wetlands
- Award a contract to remove tires in and along the Trinity River
- Continue planting and clean up activities at various locations along the Trinity River and wetlands areas

III. Transportation



Concept for Sylvan Bridge
now under construction

- I. Flood Risk Reduction
- II. Ecosystem Restoration
- **III. Transportation**
- IV. Recreation

Transportation

Sylvan Avenue Bridge – Under Construction



Construction start: March 2012
Re-open to traffic: Early 2014
Completion: June 2014
6 Lanes (3 in each direction),
6 foot-wide sidewalk, bike
lanes, ramp to park area
TxDOT cost: \$42 million



Transportation

Horseshoe Project: I-30 and I-35E Bridges

- TxDOT awarded design-build contract November 2012
- Construction under way
- Construction complete 2017
- Cost: \$798 million (private, local, state & federal)



**New drill shafts for I-30
Margaret McDermott Bridge**



**Santiago Calatrava concept
for I-30 bridge**

Transportation

Margaret Hunt Hill Bridge



- Opened March 2012
- First Santiago Calatrava vehicular bridge built in the U.S.
- Connects downtown Dallas to West Dallas over the Trinity River (Woodall Rodgers Freeway to Singleton Boulevard)



Transportation

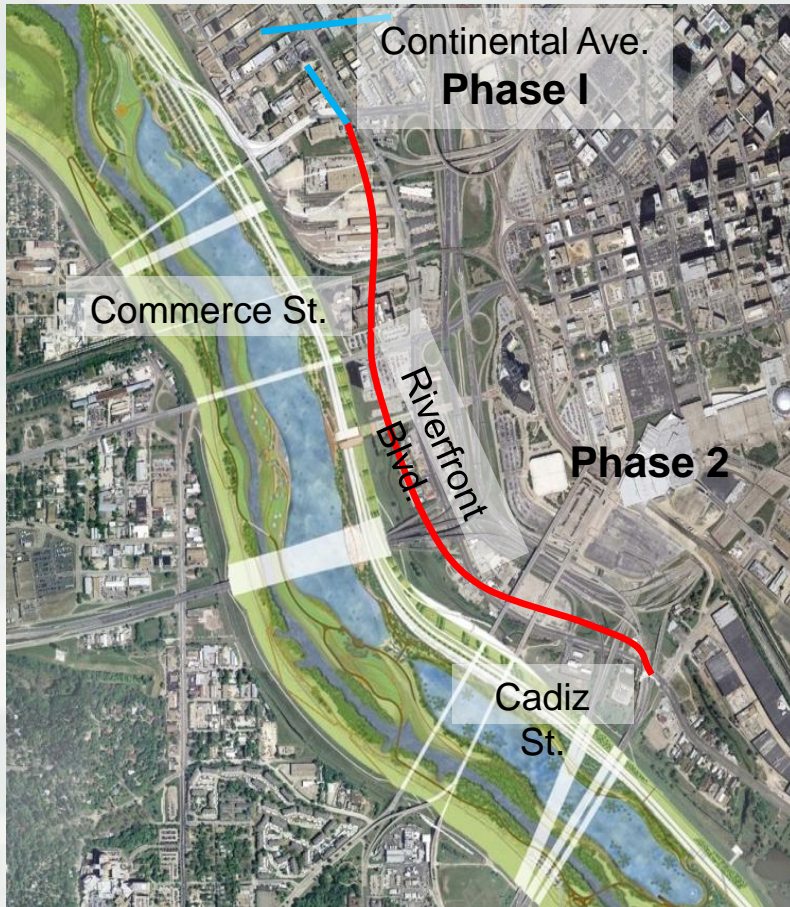
Beckley/Commerce Intersection Improvements



- Design completed in July 2013
- Estimated total cost - \$3.6 million
- Construction scheduled to begin in June 2014 (15-18 month duration)

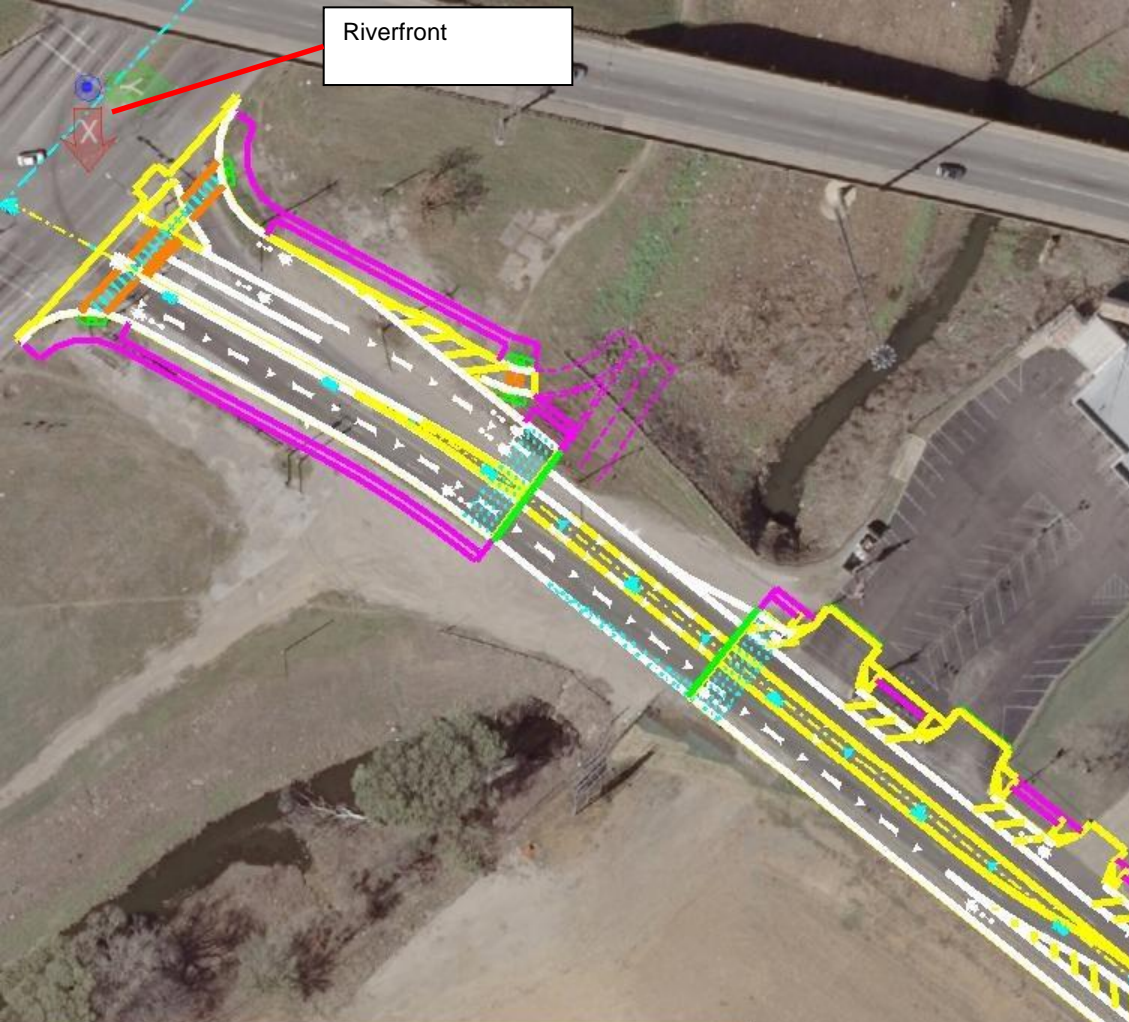
Transportation

Riverfront Boulevard – Under Design



- Phase 1 construction to begin mid-spring 2014 (lasting 19 months)
- Phase 2 construction to begin late summer 2014 (lasting 24 months)
- 6 traffic lanes, cycle track, bioswales, landscaping
- Cost: \$42.5 million city, county, North Central Texas CoG





Transportation

Cadiz Street

(From
Riverfront
To Lamar)

Estimated total cost \$4.9 million
Design completed in November 2012
Begin roadway const. by February 2014
Complete roadway const. in August 2015
Begin Sump A bridge const. late 2015
Complete Sump A bridge const. late 2016

Transportation

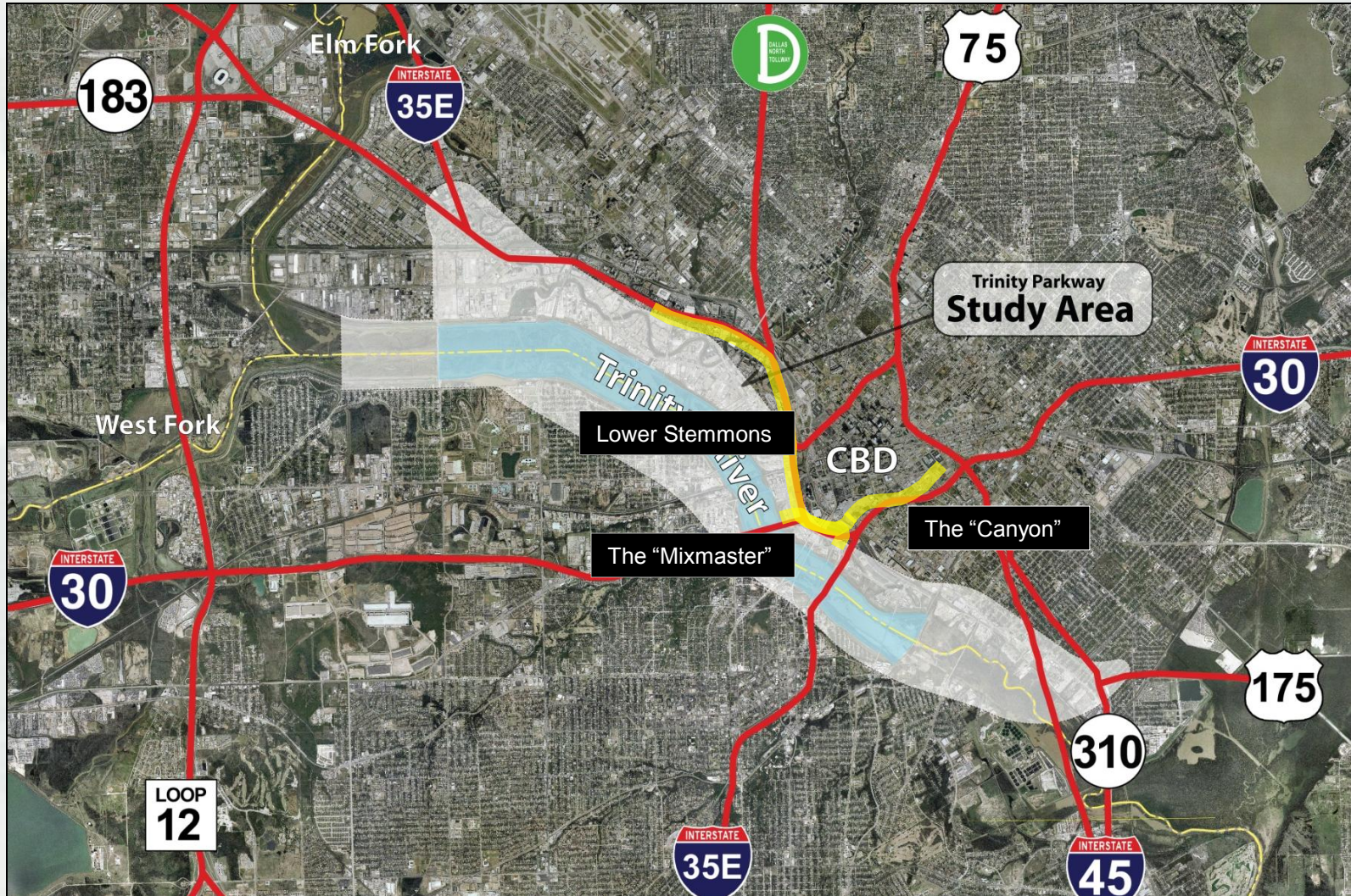
Beckley/Commerce Intersection Improvements



- Design completed in July 2013
- Estimated total cost - \$3.6 million
- Construction scheduled to begin in December 2013 (15-18 month duration)

Transportation

Trinity Parkway – Under design



Transportation

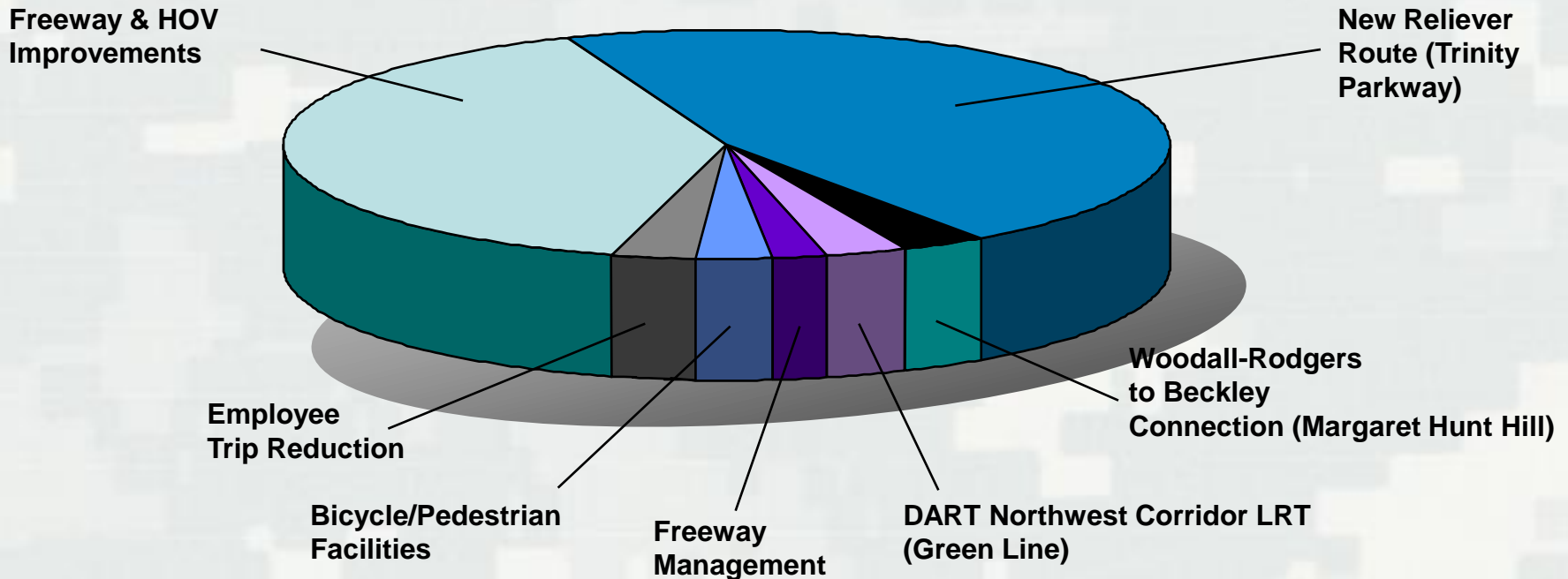
Trinity Parkway – Need and Purpose

- 1994-1996 – Trinity River Corridor Citizen's Committee recommends a levee couplet parkway
- TxDOT conducted the Major Transportation Investment Study from 1996-1998:
 - Looked at over 35 different scenarios for traffic relief in this corridor
 - Looked at vehicular, mass transit, bicycle and pedestrian options
 - Recommended a variety of solutions including the Trinity Parkway

Transportation

Trinity Parkway – Need and Purpose

- Goal was to add 250,000 person-trips of added capacity to the corridor to handle future demand
- Conclusion was a \$1 billion (in 1998 dollars) multi-modal set of transportation improvements



Transportation

Trinity Parkway Design Assumptions

- Nine mile tolled bypass around downtown Dallas to provide traffic relief for I-30 and I-35E corridors - four to six lanes (originally eight to six lanes)
- Improve mobility, manage congestion, increase safety
- Goal: Add 132,000 vehicles per day to handle future demand
- Minimize the physical, biological, and socioeconomic effects on the human environment
- Provide compatibility with local development plans
- Act on voter approval for the Trinity Parkway project
- Freeway-to-tollway interchanges planned for I-35E, SH 183/I-35E, U.S. 175/SH 310, Woodall Rodgers Freeway and I-45

Transportation

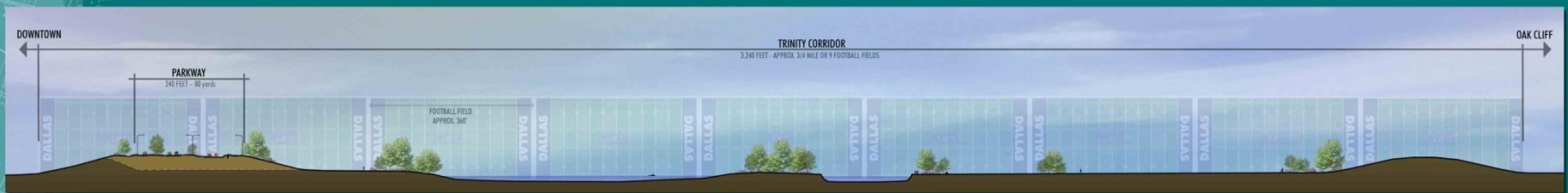
Trinity Parkway Toll Road

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

Bringing Dallas Together



Trinity Corridor Aerial View



A Levee to Levee Parkway Section
South of Sylvan Bridge
View Looking South



B Levee to Levee Parkway Section
South of Woodall Rodgers Bridge
View Looking South

Trinity Parkway

- Environmental Impact Statement underway by NTTA, to be completed in 2014

Transportation

Trinity Parkway Toll Road Concept



Looking South from Hampton Road

Transportation

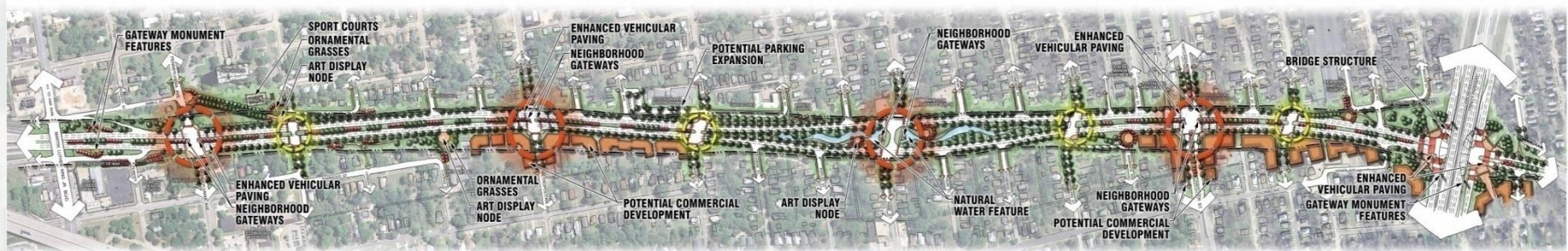
Trinity Parkway – Design Status

- December 2008: TxDOT and NTTA execute \$30 million advance funding agreement (AFA) for design and traffic and revenue studies
- December 2008: NTTA approved and entered into contract with firms for professional engineering services for design of Alternative 3C
- May 2009: preliminary plans and initial Section 408 review package submitted to Corps
- Trinity Parkway Phase I (S.M. Wright) nearing 100% design
- Complete remaining phases of design following record of decision by FHWA in 2014

Transportation

S.M. Wright Parkway – Under Design

- Trinity Parkway connection to I-45 eliminates need for “Dead Man’s Curve” at U.S. 175 and S.M. Wright
- Provides opportunity to make S.M. Wright a lower-speed, neighborhood road after the improvement to I-45/U.S. 175
- Pedestrian crossings, sidewalks, landscaping
- Construction estimated to begin in 2014 and end in 2019



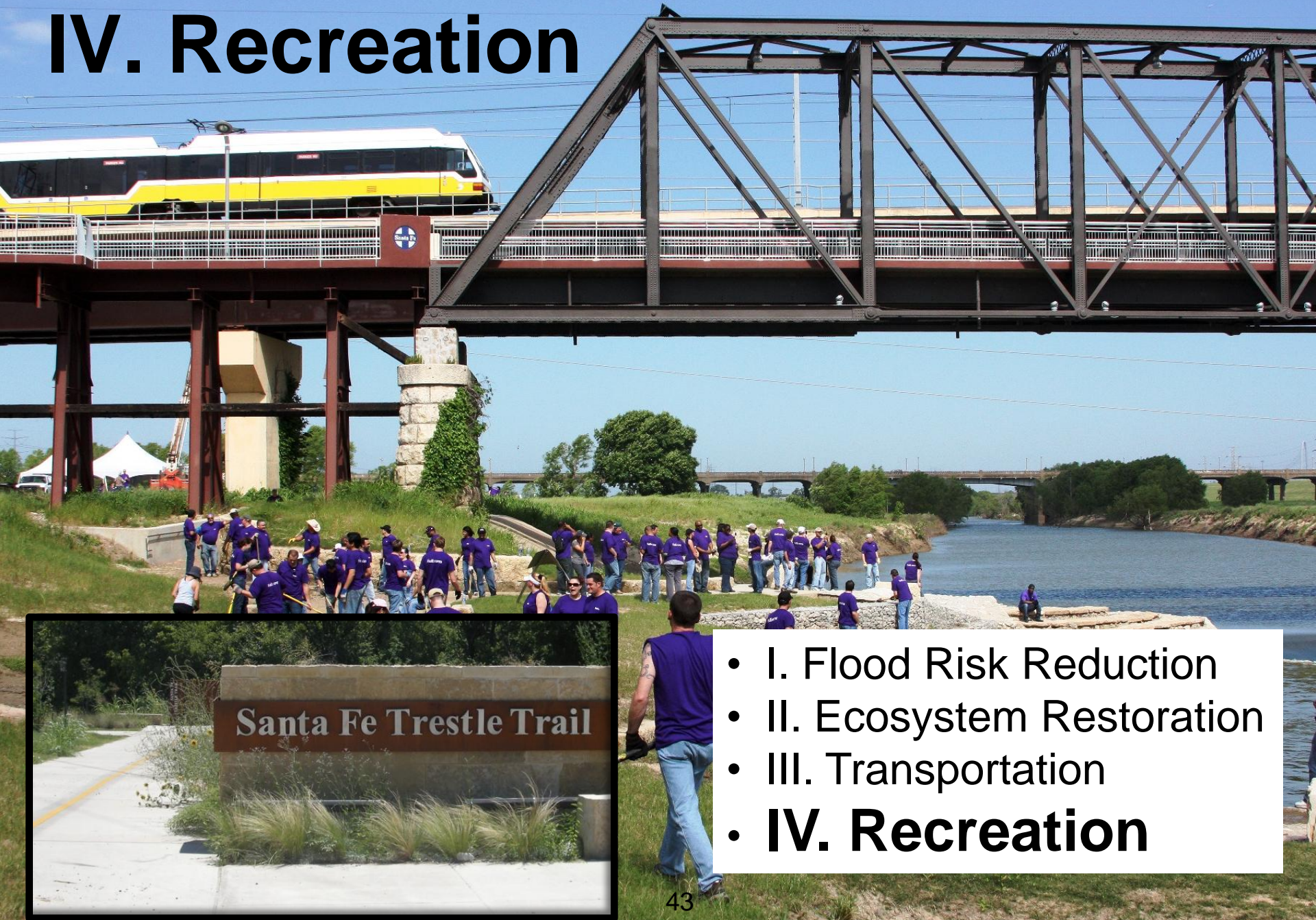
S.M. WRIGHT FREEWAY— MEANDERING ROADWAY ALIGNMENT MASTERPLAN

Transportation

Fiscal Year 2014 Next Steps

- Brief the Transportation and Trinity River Project Council Committee on the Trinity Parkway Environmental Impact Statement and the upcoming 2014 Public Hearing
- TxDOT awards design of SM Wright Phase II
- Award construction contract for Riverfront Boulevard, Cadiz Street improvements
- TxDOT awards construction contract for Trinity Parkway Phase I (SM Wright Phase I)
- Open Sylvan Avenue Bridge

IV. Recreation

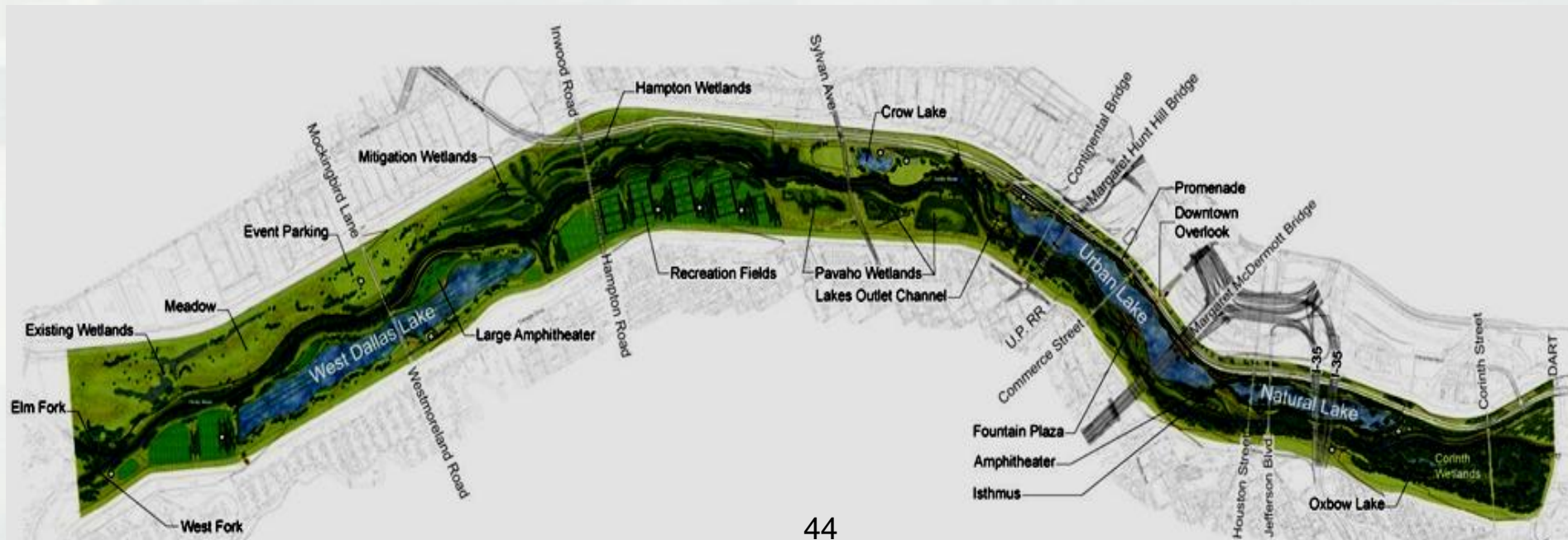


- I. Flood Risk Reduction
- II. Ecosystem Restoration
- III. Transportation
- **IV. Recreation**

Recreation

Balanced Vision Plan

In 2003 City of Dallas writes long-range Balanced Vision Plan to reclaim Trinity River as a great natural resource and unique public domain and a model of environmental stewardship that embodies the spirit of the Kessler Plan idea of nearly a century before.



Recreation

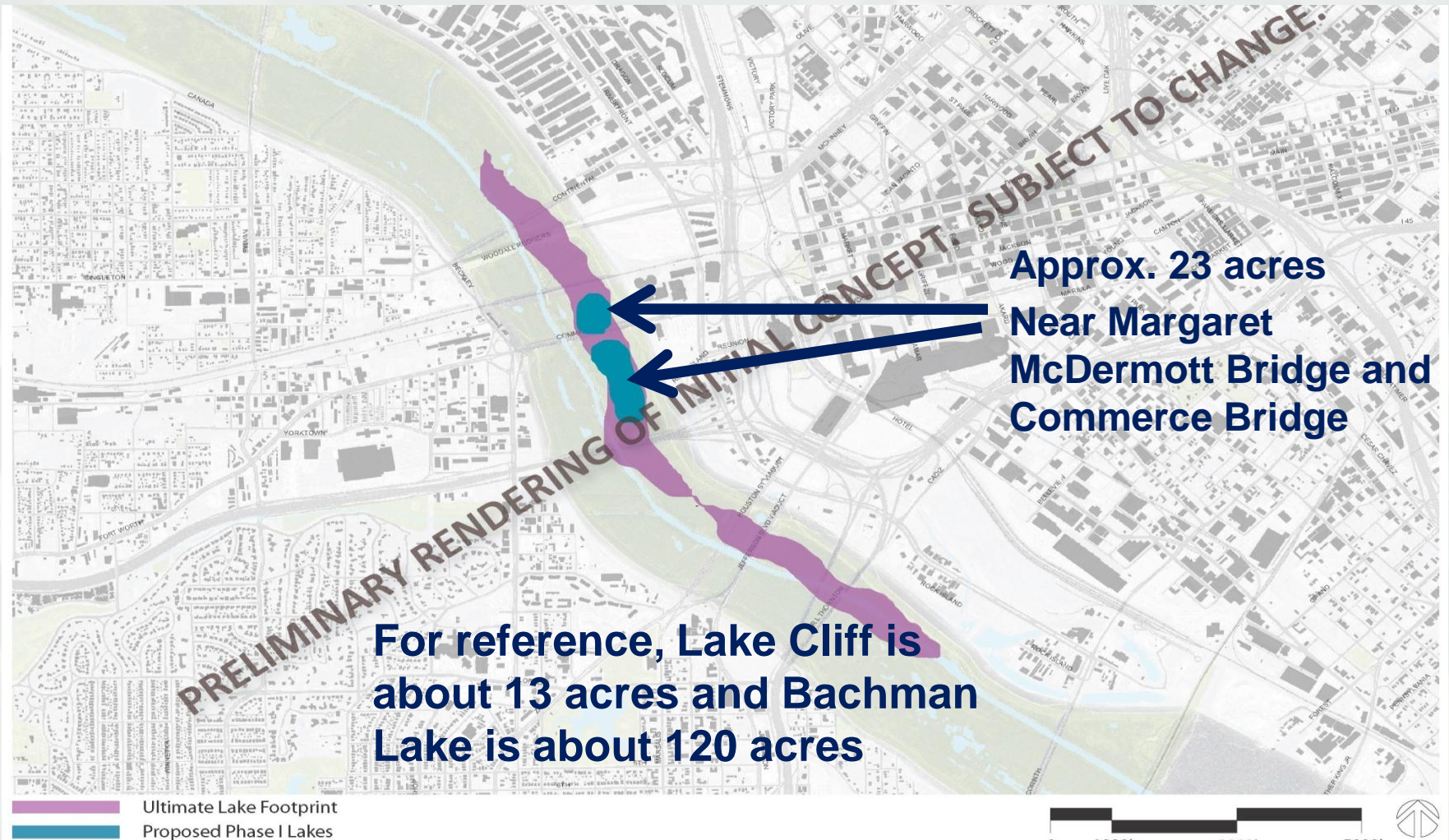
Balanced Vision Plan features



- Lakes
- River meanders
- Playing fields
- Multipurpose trails
- Canoe/kayak loop
- Amphitheater
- Restore/expand riparian corridor
- Improve aquatic habitat
- Riffle pool complexes
- Wetlands
- Pedestrian bridges
- Promenade
- Concession pads
- Boat/canoe access
- Picnic areas

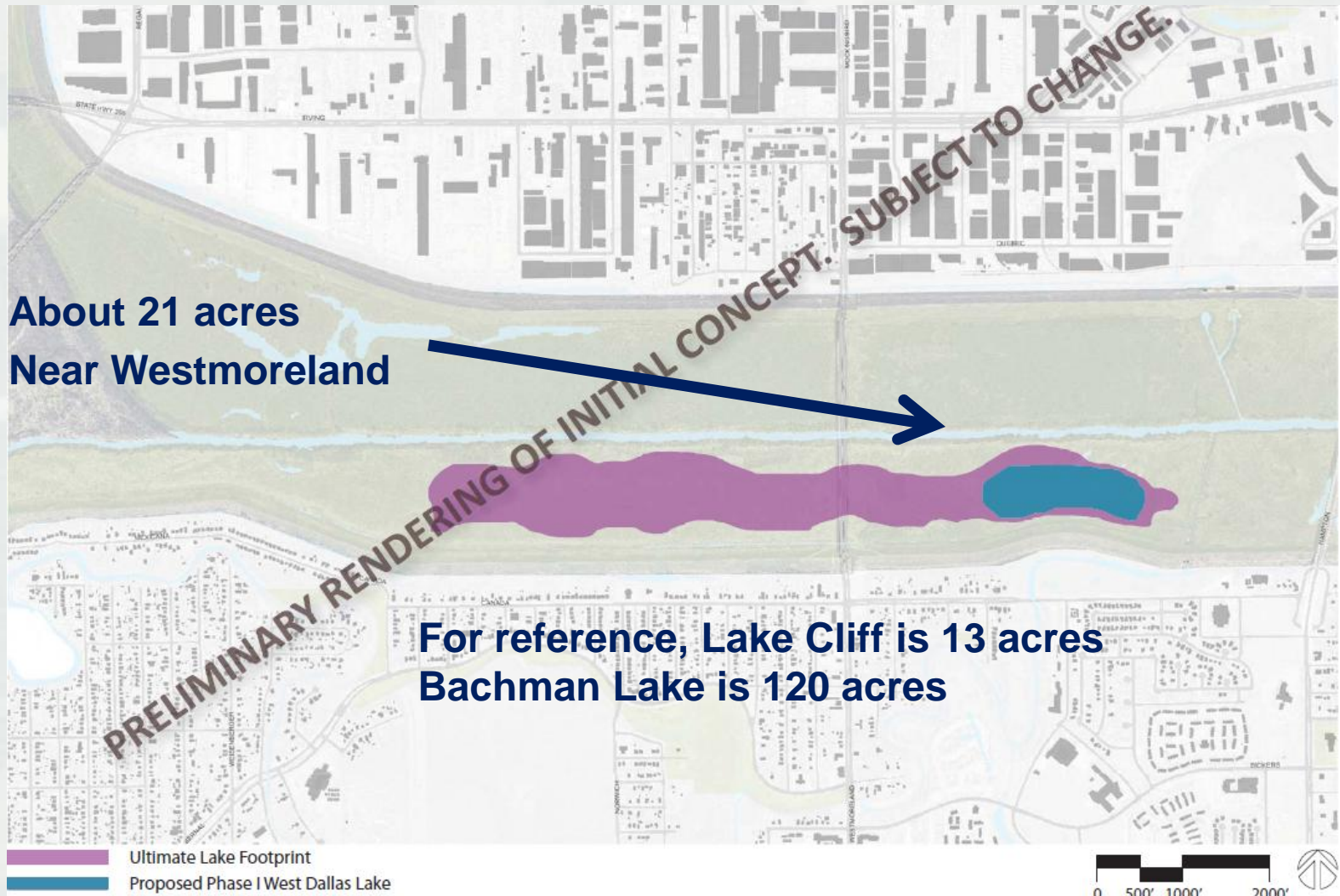
Recreation

Possible Phase I Urban Lake – Under Study
Construction could begin in late 2014



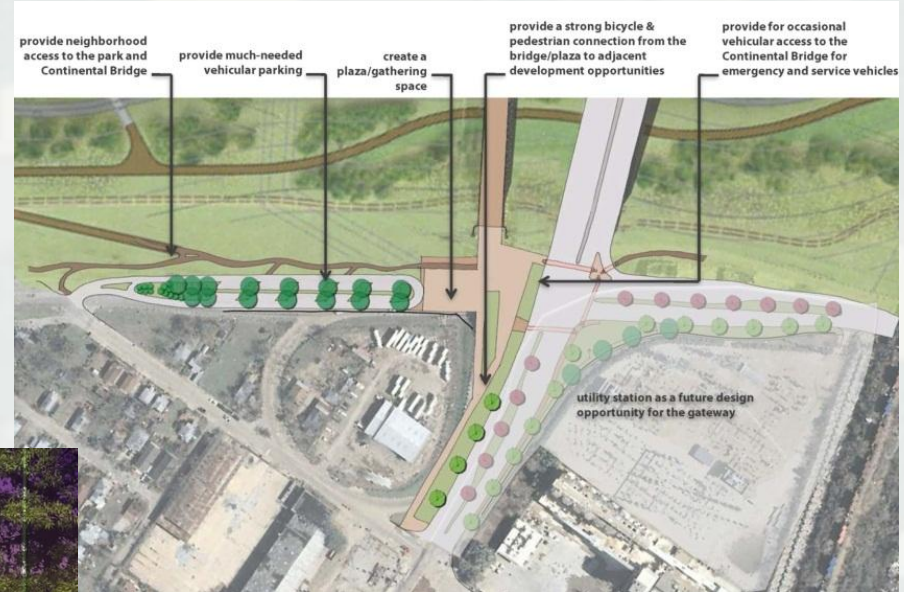
Recreation

Possible Phase I West Dallas Lake – Under Study
Construction could begin in late 2014



Recreation

Continental Avenue Bridge and West Dallas Gateway



- Construction began June 2013
- Completion estimated May 2014
- Amenities include parking, landscaping, bocce, chess, kid's play area and meditation zones
- \$10.6 million (\$8 million donation and \$2.6 million from 2006 bond funds)

Recreation

Elm Fork Athletic Complex



- Construction complete December 2013
- Estimated open for management by FC Dallas and open for play April 1
- Amenities include 10 international soccer fields (lighted), 4 international soccer fields (unlighted), 5 youth soccer fields, 2 pavilions with open play space and potential concession areas
- Construction cost about \$18 million from various bond and grant funds

Recreation

Dallas Wave – Under Construction

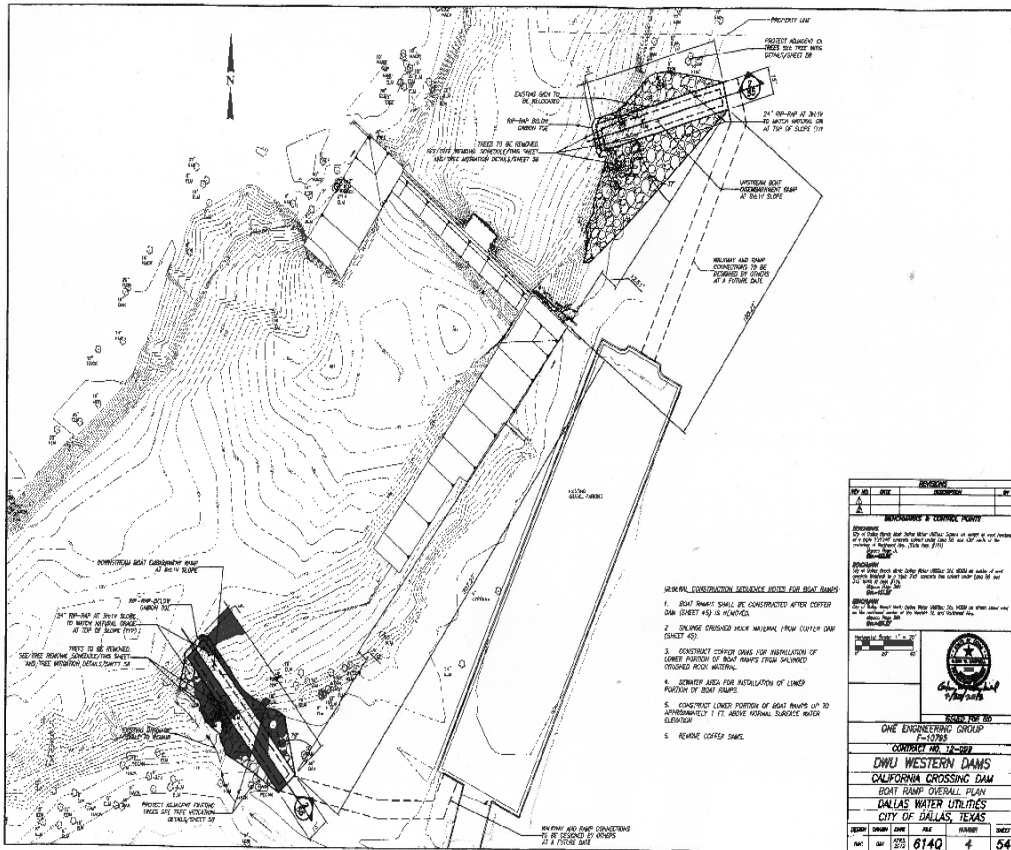


- Located off 8th Street & Corinth, under the Santa Fe Trestle Trail crossing of the Trinity River
- Construction of Wave – Complete
- Construction of bypass channel – pending additional work
- 100s of kayakers currently use this feature
- Amenities include parking lot, main wave and bypass channel



Recreation

California Crossing Canoe Launches Completion late 2013/early 2014



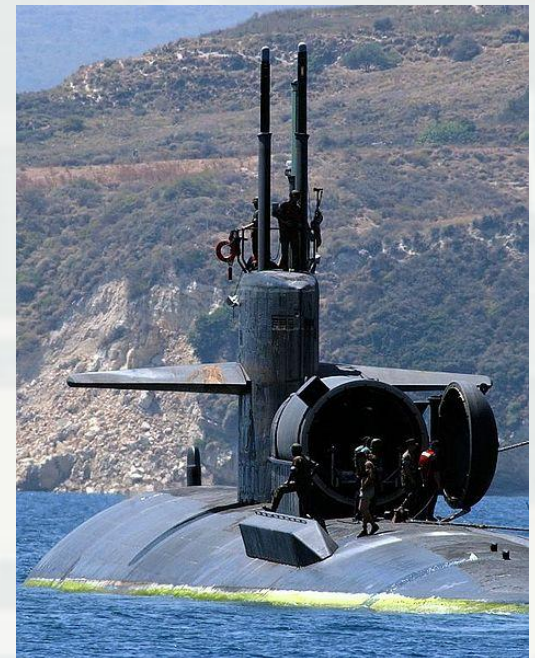
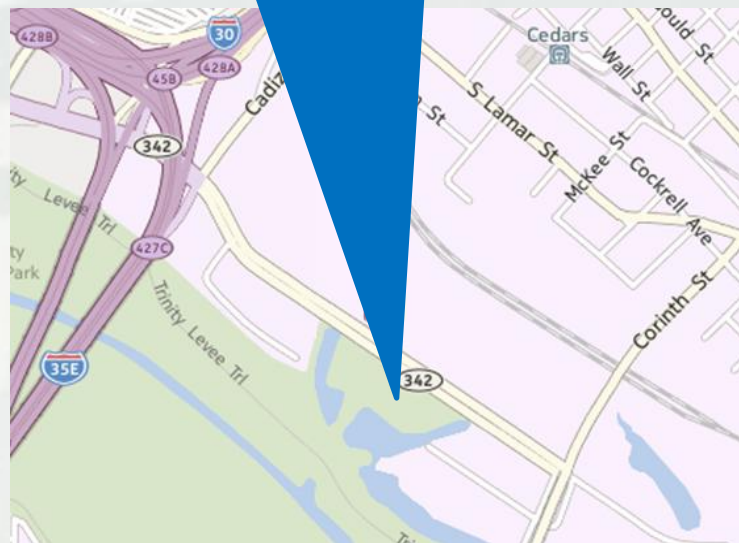
- Construction awarded September 2012
- Located at 1825 California Crossing Road
- Provides portage locations above and below the low water dam
- Construction is estimated to be complete late 2013/early 2014 (weather permitting)

Recreation

Dallas Maritime Museum – 1501 S. Riverfront Blvd.



- Planned dry land berth for USS Dallas, a 362-foot nuclear attack submarine being decommissioned in 2014
- 3.5-acre site near Trinity River
- 30,000-square-foot building planned
- Fundraisers estimate \$80 million cost



USS Dallas

Recreation

Moore Park Expansion – Completed in June



Adjacent to Santa Fe Trestle Trail
and Corinth DART rail station

Pavilion, amphitheater, pedestrian
bridge over Cedar Creek and parking

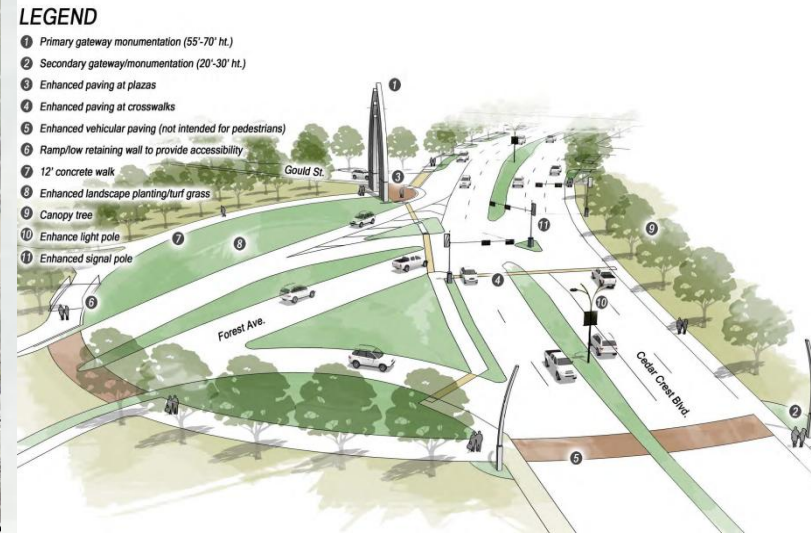
Recreation

MLK Jr./Cedar Crest Bridge

- Construction began October 2013; opens November 2014

- Amenities include street beautification, overlook, pedestrian amenities and parking lot access to future trail connections to Moore Park

- \$5 million construction budget from 1998 bond funds



CEDAR CREST BLVD. BRIDGE GATEWAY ENHANCEMENTS

HALFF

DALLAS, TEXAS



Recreation

South Central (Joppa) Gateway

Construction could begin spring 2014 (pending land acquisition) at South Central Park on Fellows Lane

Amenities could include:

- Expansion of existing park to connect the neighborhood to the Trinity River Lower Chain of Wetlands
- Mini spray area
- Upgrades to the existing basketball court
- Two open play areas
- Additional walkway
- Off-street parking area
- \$800,000 to \$900,000 construction budget from 2006 Bond Funds

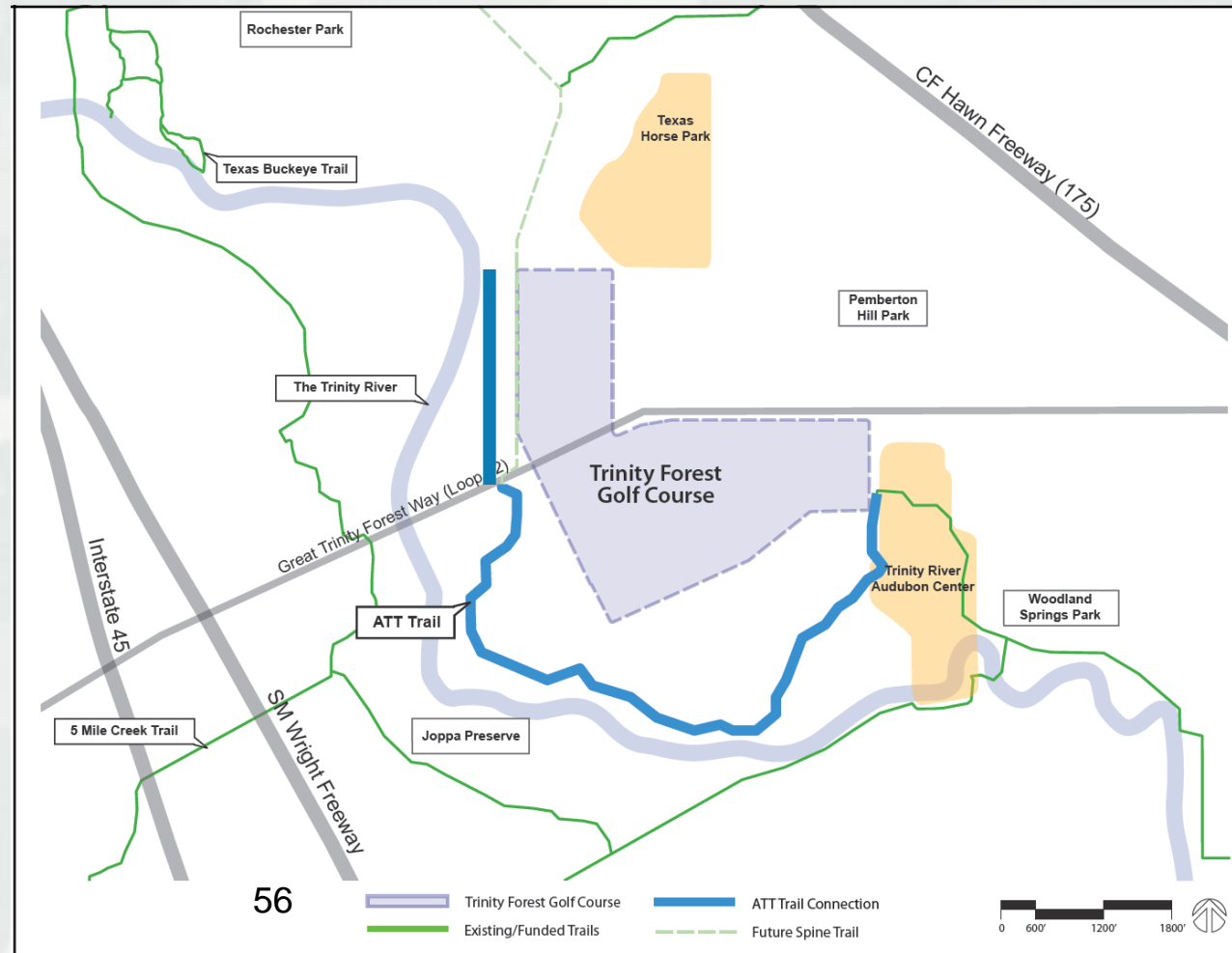


Recreation

Trinity Forest Golf Course

Anticipated construction start: 2014; opening 2016
PGA tour site for the Byron Nelson by 2019

- 400-acre former landfill
- PGA quality 18-hole course
- 9-hole short course, practice facility
- Partnership of AT&T, SMU, city, SMU Golf Team, First Tee of Greater Dallas youth group and others



Recreation

Texas Horse Park

- Construction started: Summer 2013
- Estimated finish: Summer 2014
- Non-profit phase includes a therapeutic center, arenas, a camp house and trail ride opportunities
- \$12 million cost from 1998 & 2006 bond funds and Hillcrest Foundation grants
- Partners include:
 - Equest Therapeutic Horsemanship
 - River Ranch Educational Charities
 - Texas Horse Park Foundation



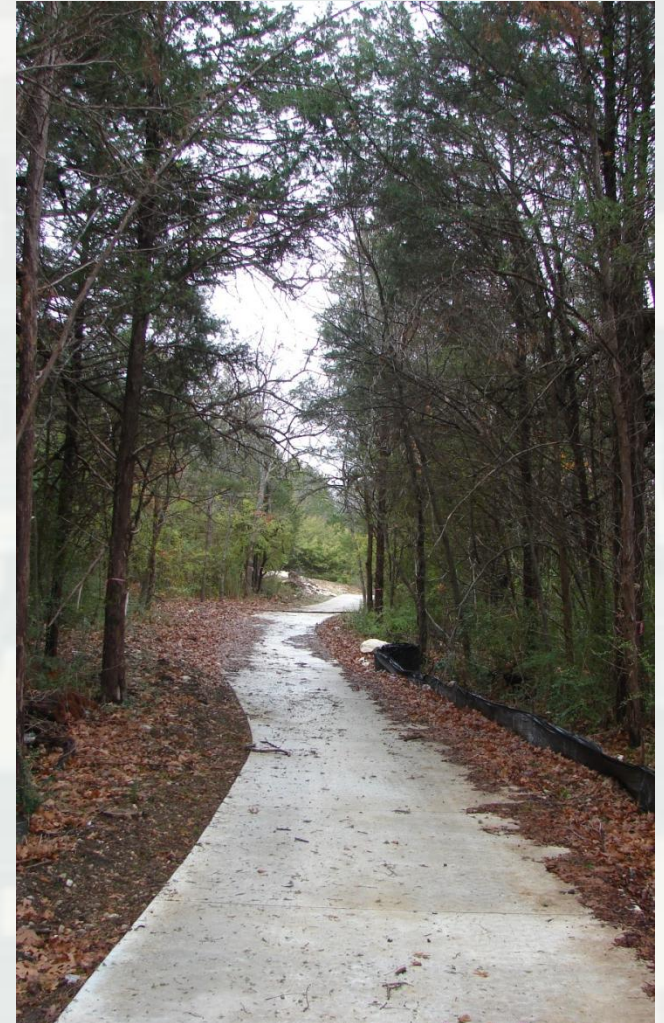
Location: Pemberton Hill & Elam Road



Recreation

Great Trinity Forest Gateway and Horse Trails

- Location: I-20 at Dowdy Ferry Road
- Opened June 2013
- Pavilion, fishing piers, bathrooms, trails, satellite connection to Texas Horse Park
- \$1 million from 1998 bond funds



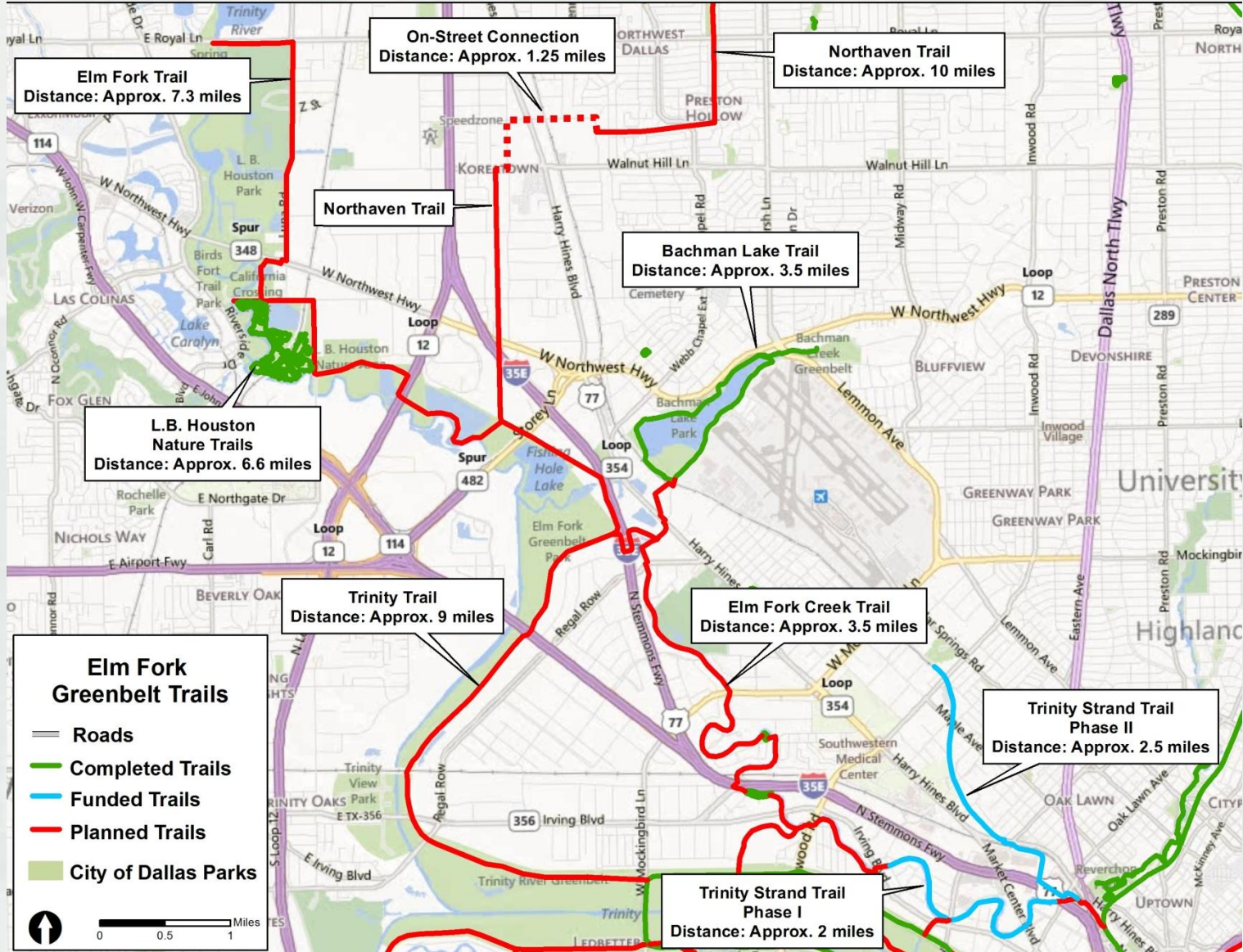
Recreation

Trinity Trails Network Background

- Trinity Trails Network is a subset of the City's Trail Network System
- Extends from Royal Lane near Luna in the north to I-20 & Dowdy Ferry in the south
- Hard surface trails – 62.7 miles planned (8 miles in service)
- Soft surface trails – 18.8 miles in service

Recreation

Elm Fork Greenbelt Trails



Recreation

Santa Fe Trestle Trail



- Two trailheads: 2295 S. Riverfront Blvd. and 1837 E. 8th St. (DART overflow parking lot next to Moore Park)
- Trail length: .86 miles from west entrance at Moore Park to east parking lot inside floodway



Recreation

Hike-Bike Trinity Forest Trails (South of Santa Fe Bridge)



Phase 1
complete
from Joppa
Preserve to
Eco Park



- Trailheads, 12 feet wide, hard surface trail, parking and kiosks
- Phase 1 Trail length – 2 miles
- Phase 2 Trail length – 2 miles

Phase 2 complete linking Joppa Preserve to Trinity River Audubon Center

Recreation

Texas Buckeye Trail and Soft Surface Trails



- Trailheads at 7000 Bexar St. and 3000 Municipal St.
- Soft surface trail – Approximately 8 miles (Blue Line)
- Trailhead and ADA trail (Green Line)
- Trailhead and Trail (Red Line)



Recreation

William Blair Jr. Park Gateway Trailhead

3000 Municipal St.



Recreation

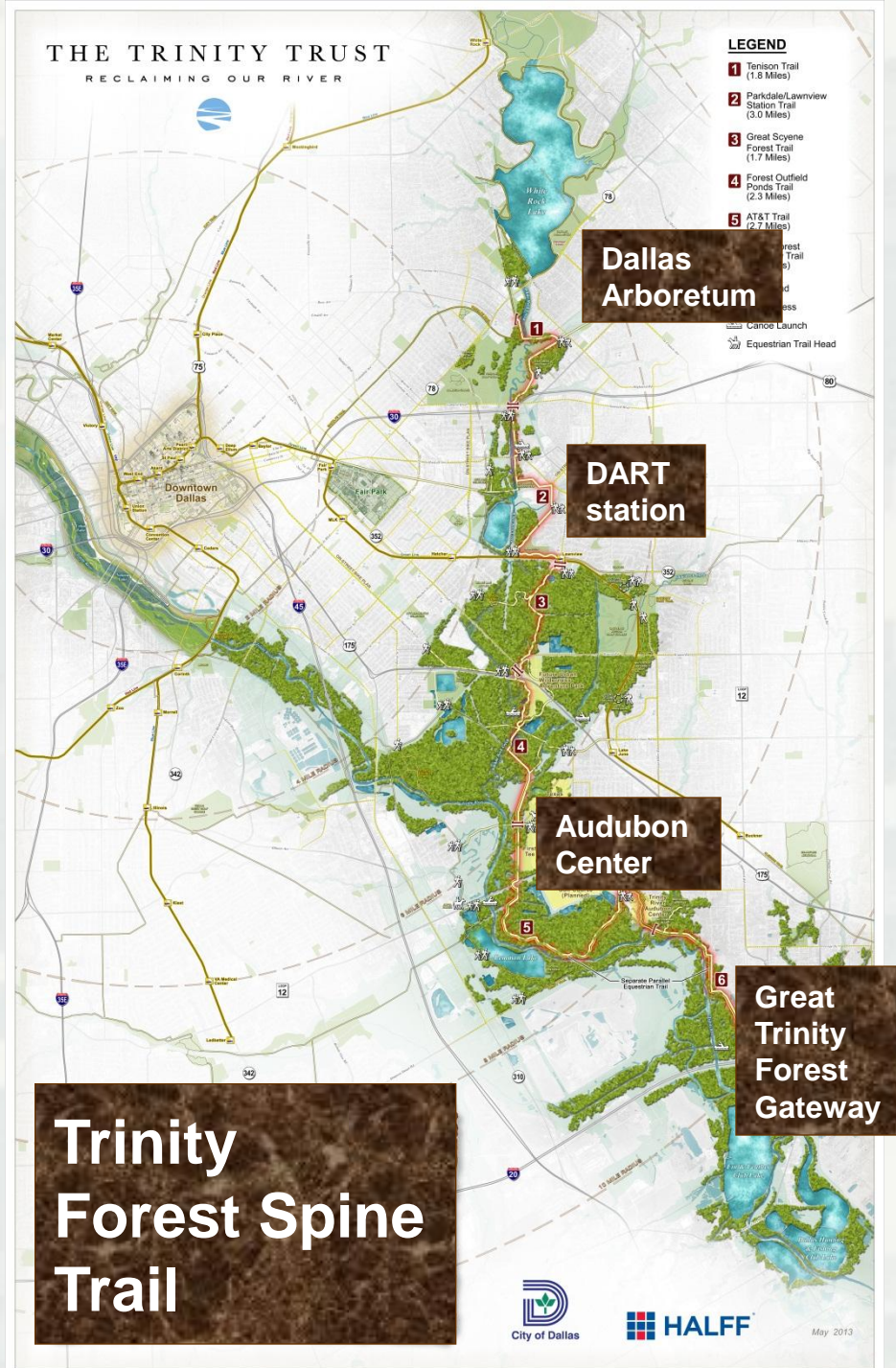
AT&T Trails (Trinity Trails Phase IIIA) Under Construction



- Starts at Trinity River Audubon Center and loops under Great Trinity Forest Way, ending at Elam Road
- Construction began summer 2013
- Could open in winter 2014
- Construction cost about \$1.9 million from AT&T donation

Recreation Trinity Forest Spine Trail

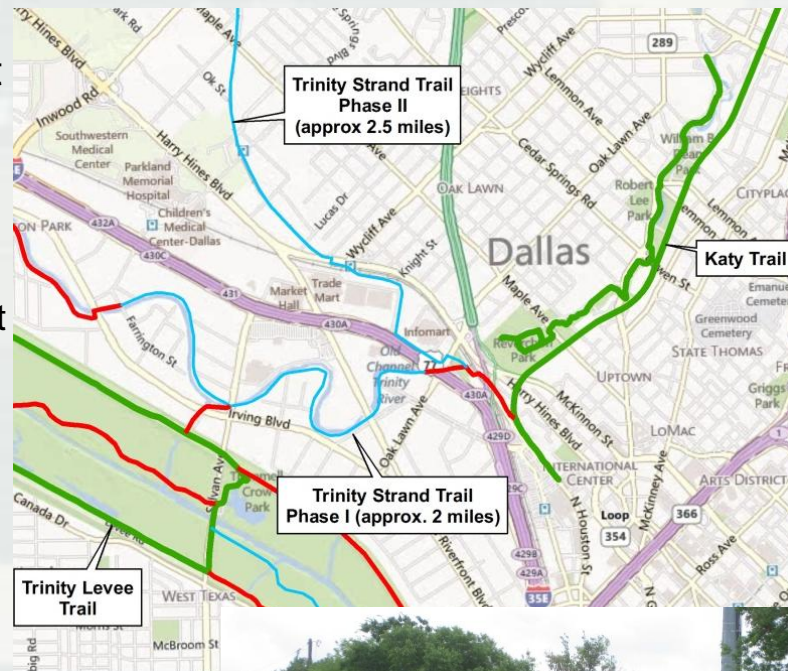
- Study funded through a grant from the Trinity Trust to be completed in 2014
- Connecting the southern-most boundary of the Great Trinity Forest to the Dallas Arboretum
- Trailheads locations include the Great Trinity Forest Gateway & Horse Trails, Audubon Center, Lawnview/Scyene DART Station, and Dallas Arboretum
- Construction estimated to be about \$17 million; fundraising campaign kick off by The Trinity Trust in May 2013



Recreation

Trinity Strand Trail – Under Construction

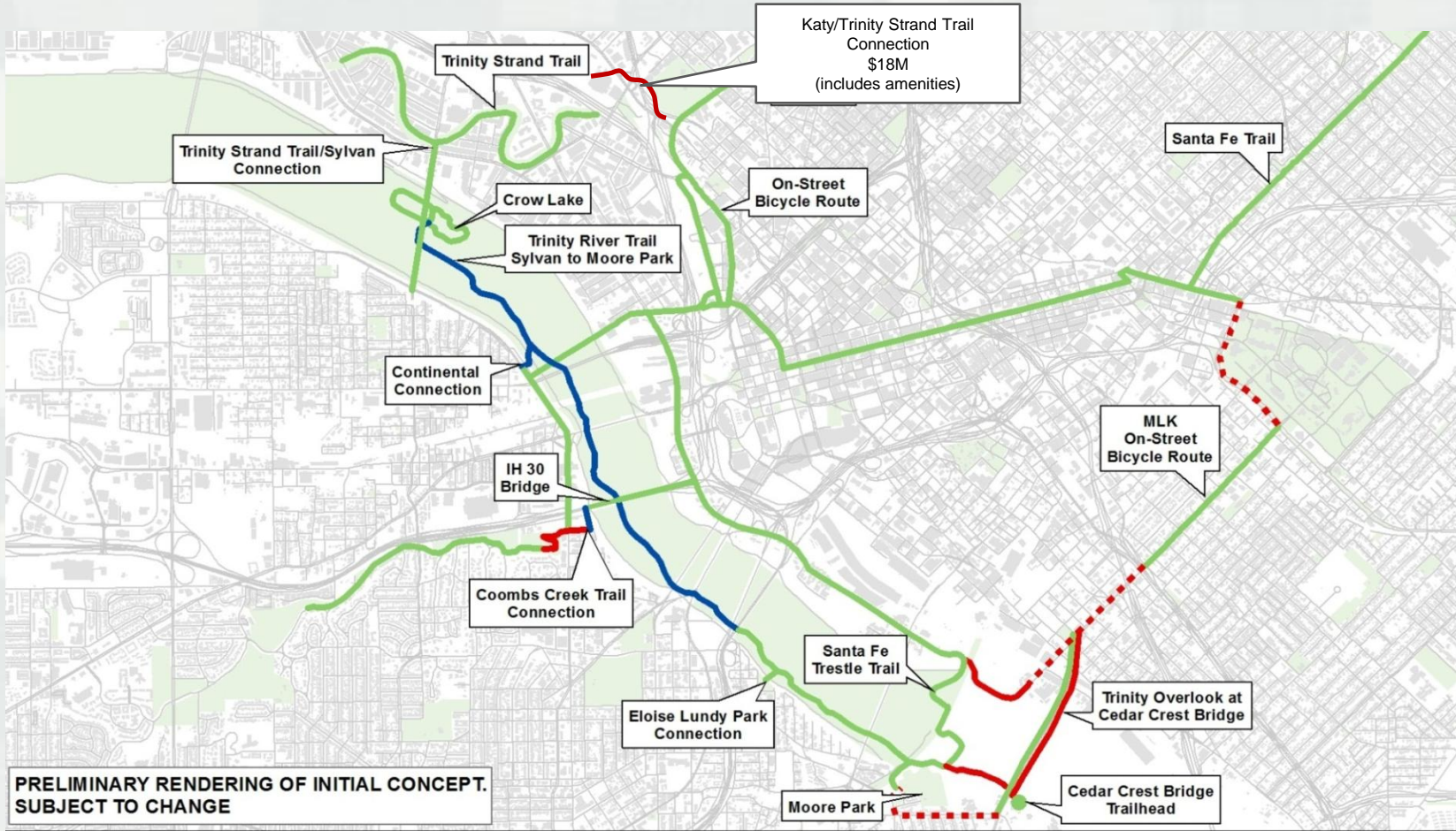
- **Phase I** from Oak Lawn to Medical District Drive, connecting at Sylvan Avenue
- Construction could be complete spring 2014
- Amenities include plaza at Turtle Creek, 12-foot concrete trail
- **Phase II** from Oak Lawn to Inwood funded through 2012 Bond Program
- Design begins early 2014
- **Phase III** from Hi Line to Farrington Street near Medical District Drive at Irving Boulevard, soft surface trails and bridges
- Under design



Recreation

Trinity Floodway Trails

\$6,418,400 from 2012 Bond Program for design & construction of trails



Trinity Trail



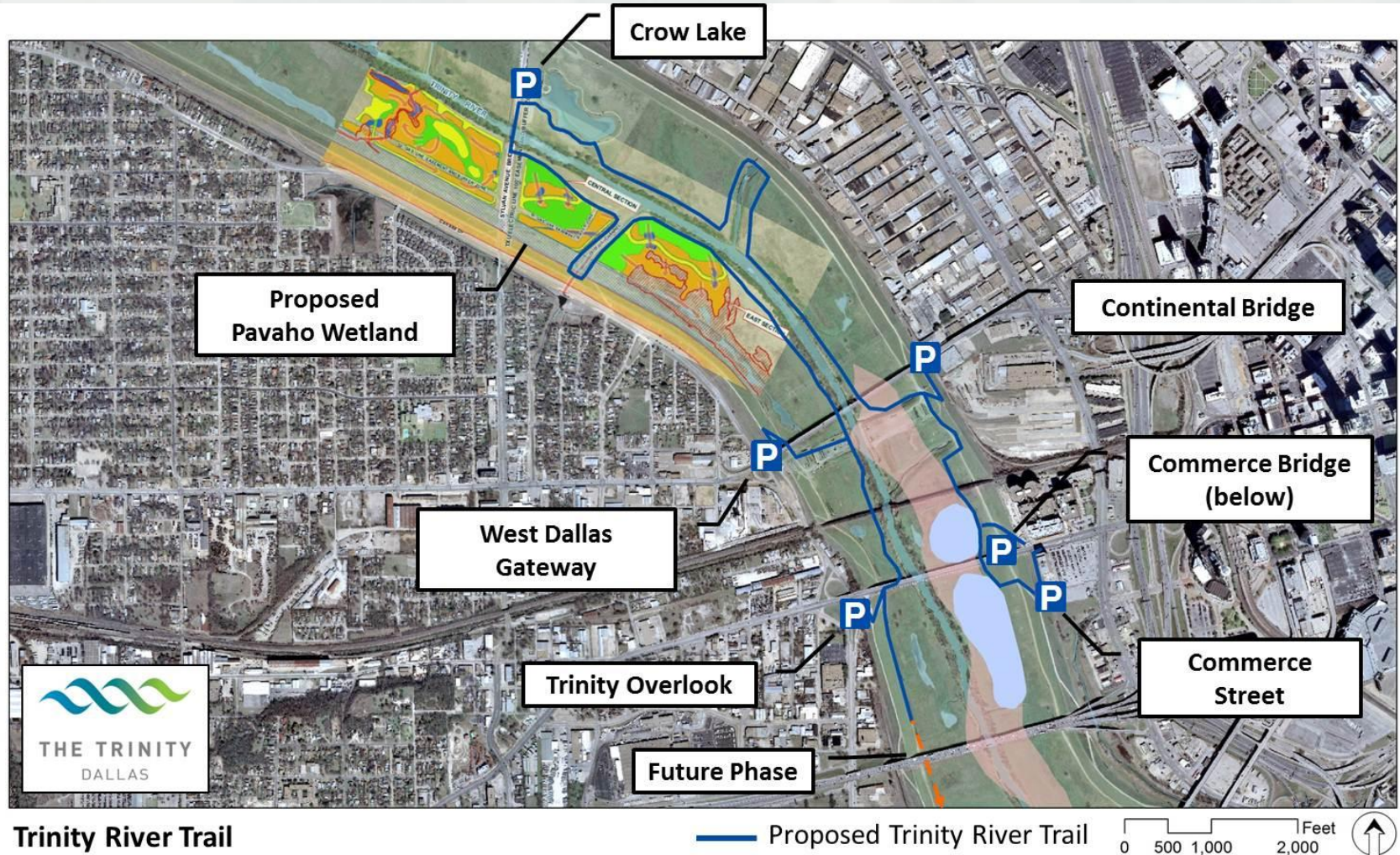
Recreation

Proposed Alignment for All Weather Joint Use Maintenance Road / Trinity Floodway Trails

- To advance this trail ahead of the Corps' Environmental Impact Statement (EIS), the 2012 Bond Program proposed alignment could be modified and constructed as an all weather joint use maintenance road for:
 - Maintenance trucks and other equipment
 - Pedestrians
 - Cyclists

Recreation

Alignment for All Weather Joint Use Maintenance Road / Trinity Floodway Trails



Trinity River Trail

— Proposed Trinity River Trail 0 500 1,000 2,000 Feet

Recreation

Alignment for All Weather Joint Use Maintenance Road / Trinity Floodway Trails

- Funds are reserved to complete:
 - Connections crossing outfalls following the Dallas Floodway EIS (could begin in late 2014)
 - Connections to the Coombs Creek Trail at I-30 (as soon as I-30 is complete)
 - Connection between I-30 and I-35E following completion of Horseshoe Project (2017)

Recreation

Fiscal Year 2014 Next Steps

- Transportation and Trinity River Project Council Committee will be briefed on the Trinity Forest Spine Trail
- Begin design of possible lakes
- Open AT&T Trail
- Open Texas Horse Park

Trinity River Corridor Project Update

Questions?



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