

Memorandum



CITY OF DALLAS

DATE October 7, 2010

TO Trinity River Corridor Project Committee Members:

David A. Neumann (Chairman)	Vonciel Jones Hill
Steve Salazar (Vice-Chair)	Delia Jasso
Mayor Pro Tem Dwaine Caraway	Linda Koop
Deputy Mayor Pro Tem Pauline Medrano	Ann Margolin
Carolyn R. Davis	

SUBJECT **Dallas Floodway System Update 100-Year Levee Remediation**

The attached briefing will be presented at the Trinity River Corridor Project Committee meeting on October 12, 2010 at 9:30 A.M. This briefing provides an update of the progress to date for retaining FEMA certification for our levees for the 100-year flood, and outlines the steps, including the estimated timeline and funding sources, for making the 100-year levee fixes

Please contact me if you have questions.

Jill A. Jordan, P.E.
Assistant City Manager



THE TRINITY
DALLAS

Attachment

C: Honorable Mayor and Members of the City Council
Mary K. Suhm, City Manager
Ryan S. Evans, First Assistant City Manager
A.C. Gonzalez, Assistant City Manager
Forest E. Turner, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Deborah A. Watkins, City Secretary
Thomas P. Perkins, Jr., City Attorney
Craig D. Kinton, City Auditor
Judge C. Victor Lander
Helena Stevens-Thompson, Asst. to the City Manager
Frank Libro, Director, Public Information Office
Kelly High, Director, Trinity Watershed Management
Rebecca Rasor, P.E., Managing Director, Trinity River Corridor Project



THE TRINITY
DALLAS

Dallas Floodway System Update 100-Year Levee Remediation

Presented to
Trinity River Corridor Project Committee
October 12, 2010

In Summary...

- The City and Corps are committed to protecting people and property
- FEMA's latest schedule for releasing revised flood maps has been adjusted from August 2011 to December 2011
- As part of the design of the 100-year levee fixes it was determined soil strength testing is necessary
- The City and Corps are committed to conducting the tests on an aggressive schedule, staying committed to meeting FEMA's remapping schedule
- If it appears FEMA's remapping schedule will not be met, new solutions for a path forward will be brought to Council for consideration in January 2011



Outline

- Purpose
- Overview
- FEMA Remapping
- 100-year Levee Remediation Plan
- Fully Softened Shear Strength Test
- Parallel Initiatives that May Affect Remapping
- Next Steps

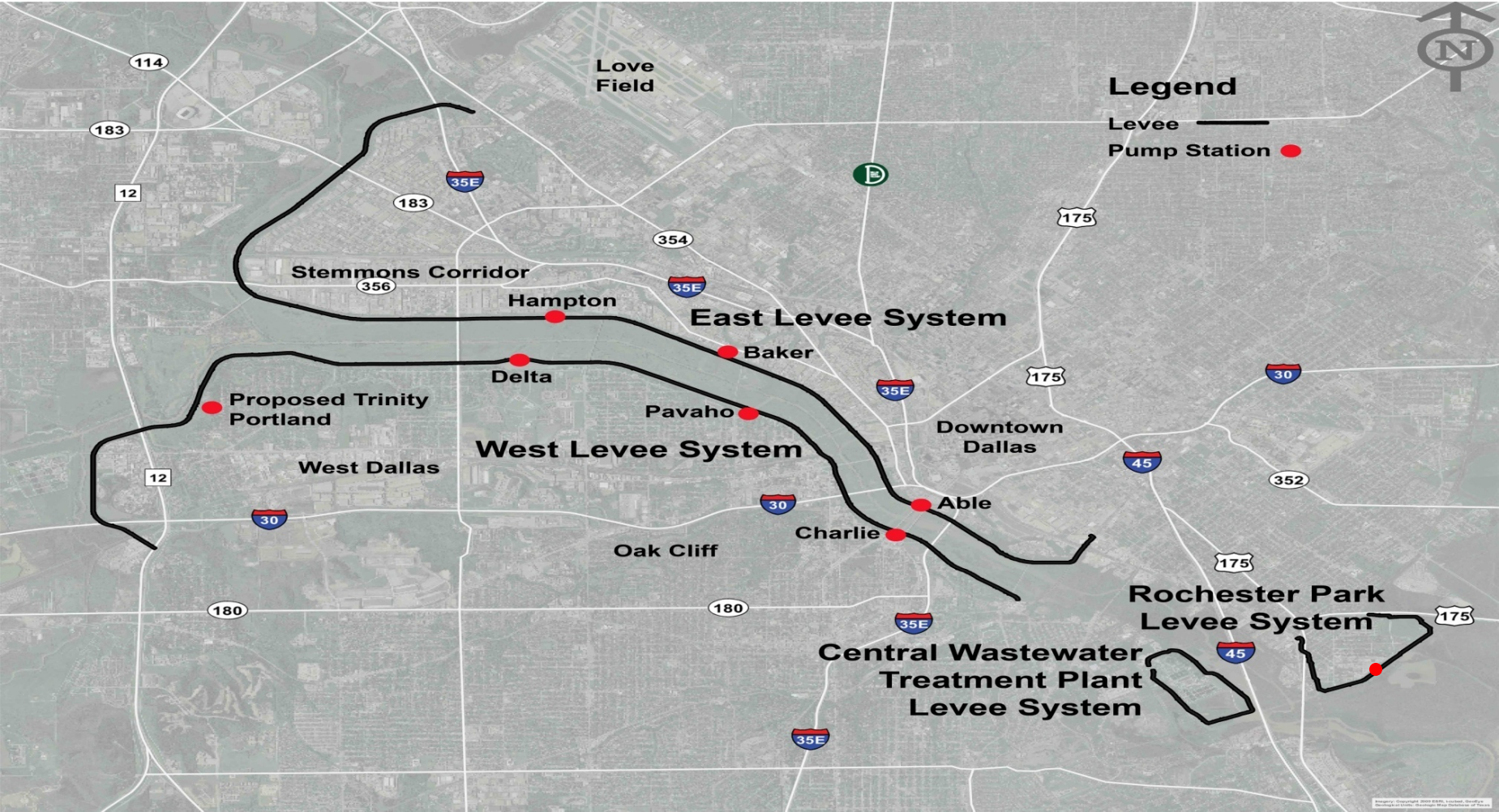


Purpose of Briefing

- Provide an update of the progress to date for retaining FEMA certification that the Dallas Floodway System Levees can withstand the 100-year flood (flood that has a 1% chance of being equaled or exceeded in a given year)
- Outline the steps, including the estimated timeline and funding sources, for making the 100-year levee fixes



Dallas Floodway System Map



- **Flood Protection is of critical importance to the City**
- Dallas Floodway System protects billions of dollars of property value
- Dallas Floodway System historically received **good, very good or excellent ratings** on annual and periodic (every 5 years) inspections
- Our levees still meet the standards to which they were built by the Corps in the 1950's



Overview (cont'd)

- After Hurricane Katrina, a National Levee Safety Program was instituted resulting in more rigorous and nationally uniform criteria for inspecting levee systems
- Dallas Floodway Levee System was one of first levee systems in a major American City to be inspected based on new rating criteria
 - As of 2008, over 200 US levees failed inspection by the Corps
 - Those cities/local flood control districts will have to bear entire cost of correction unless they are in a cost sharing partnership with the Corps – most are not
 - City is currently in a cost sharing partnership with the Corps for the Dallas Floodway Environmental Impact Statement (EIS)



Overview (cont'd)

- Under this new criteria, the Corps issued Periodic Inspection Report 9 (PI #9) in March 2009 and rated the Dallas Levee System “unacceptable”
 - Deficiencies of two types were identified:
 - Operations & Maintenance (O&M) such as vegetation, siltation and erosion
 - To date approximately, **181** of the 198 items have been addressed
 - System wide issues such as levee height, seepage and stability
 - Levee height and stability issues were the fundamental drivers for the Trinity River Corridor Project and the partnership with the Corps since 1993



Overview (cont'd)

- As a part of our partnership with the Corps, the City and the Corps expanded the scope of the current EIS to include study of levee deficiencies. This is called the System Study (800-Year Levee project)
 - System Study is underway to identify and address system-wide deficiencies
- City has preliminary design identifying 100-year levee issues and fixes
 - In August 2010, the Draft Master Plan of the 100-year levee fixes and Draft Environmental Assessment document were submitted to the Corps



FEMA Remapping

- After PI #9, the Corps withdrew a letter used to support the technical certification of the Dallas levees, and FEMA began its de-accreditation process in April 2009
 - FEMA is remapping the area around Dallas Floodway as if levees are not there
 - If remapping occurs, ramifications include:
 - Existing structures within the remapped areas that have federally backed mortgages will have to carry flood insurance
 - No new building permits unless on fill or elevated
 - Lending institutions may require flood insurance prior to FEMA's final effective maps

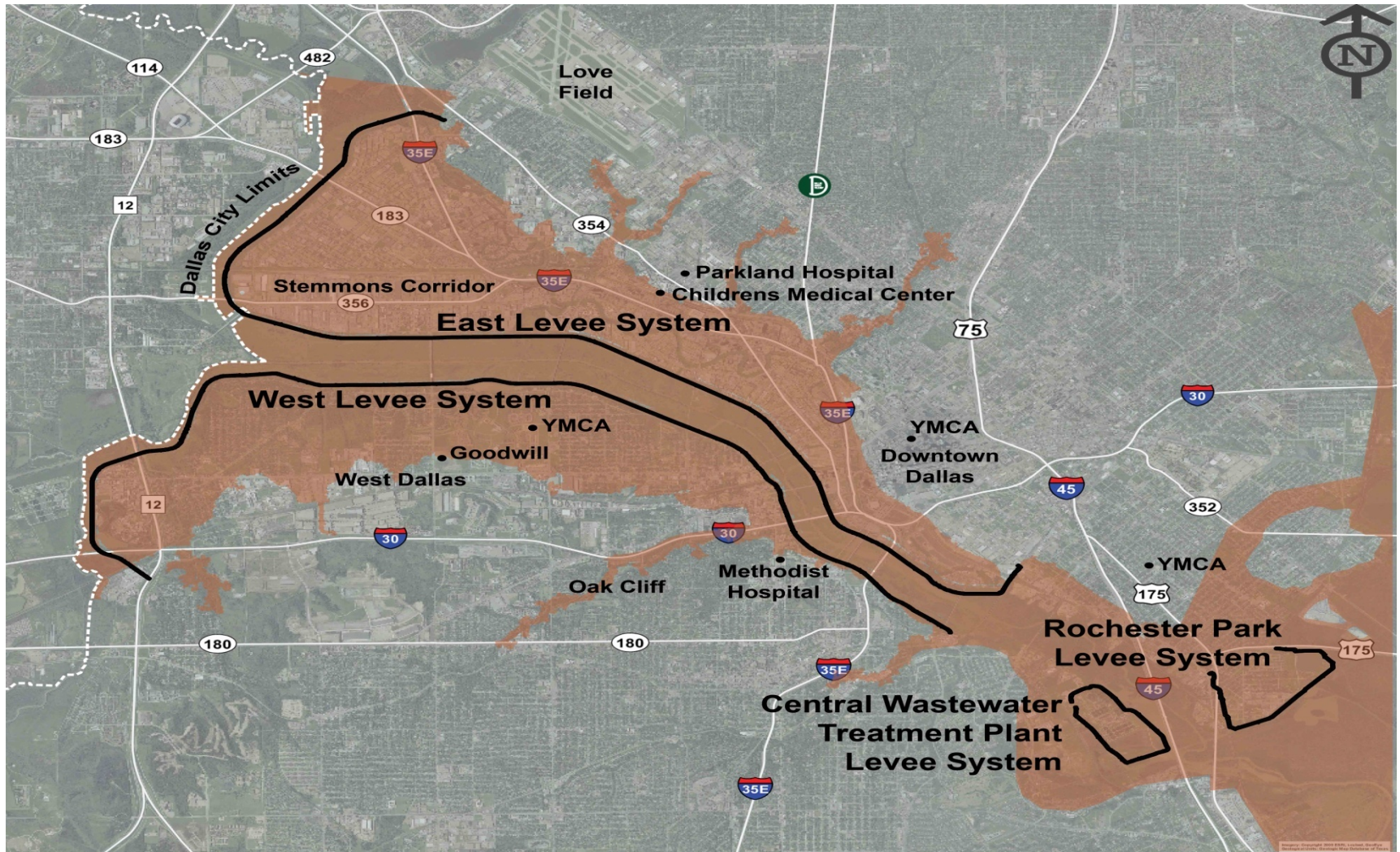


FEMA Remapping

- FEMA has been working closely with the City
- FEMA's schedule for the release of the revised finalized flood maps have been **adjusted** by **four months**

<i>FEMA Actions</i>	<i>Original Schedule</i>	<i>Latest Schedule</i>
Preliminary revision to current maps released for public comments	September 2010	February 2011 (90 day period to submit concerns about map begins)
Revised flood maps finalized (Depends on resolution of public comments)	August 2011	December 2011 (This is the Date to Beat)
Final effective maps in place	February 2012	June 2012

This Map Approximates What FEMA's Remapping Could Look Like Assuming no levee protection



- To prevent remapping, City would have to:
 - Complete levee repairs by **December 2011**
 - 100-Year Levee Remediation
 - Submit 100-year flood certification information to FEMA for floodway/levees by **December 2011**
- The City must fix 3 levee systems
 1. Central Wastewater Treatment Plant (CWWTP)
 2. Rochester
 3. Dallas Floodway (East and West levees)



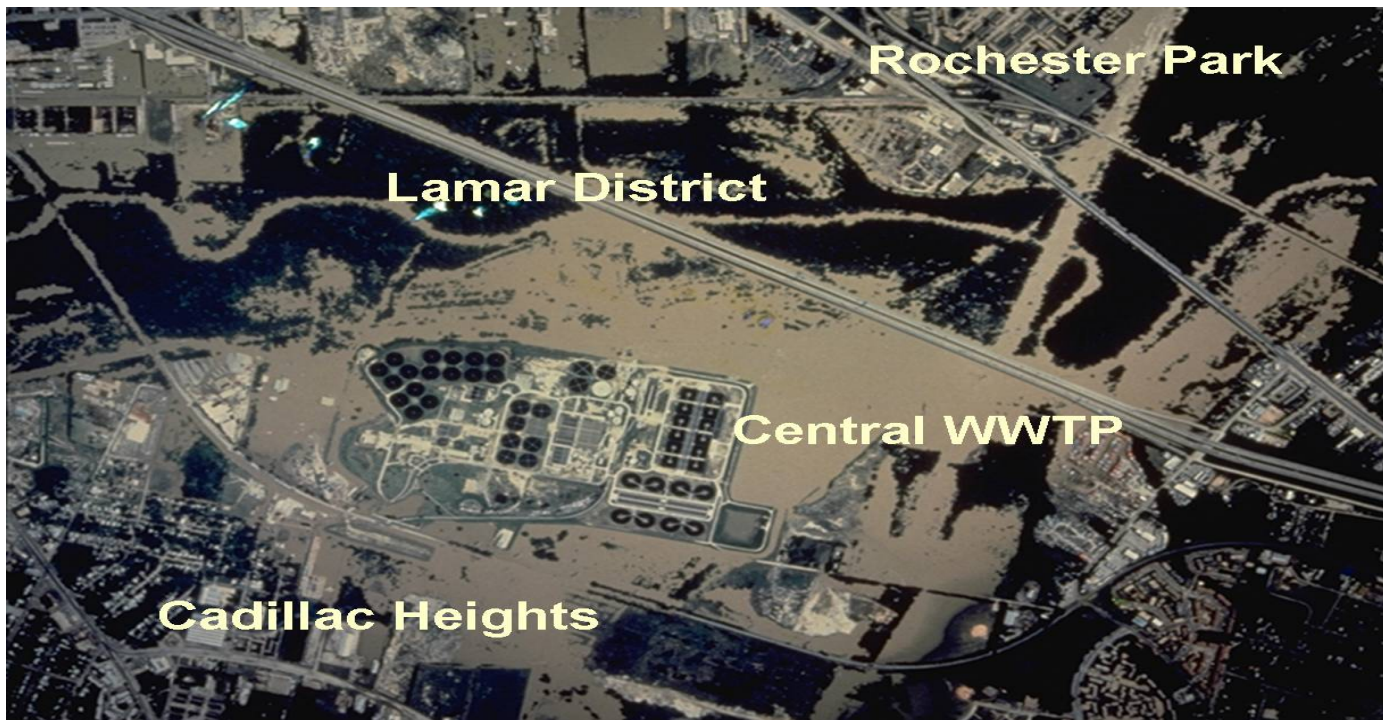
100-Year Levee Remediation Plan

- Funding plan for construction of 100-year flood improvements have been previously briefed to City Council in April 2010 consisting of:
 - Re-allocation of Flood Protection Bond Program projects
 - Stormwater Funds
 - Dallas Water Utility (DWU) Funds
 - Potential Corps Funds



1. Central Wastewater Treatment Plant - 100-Year Levee Remediation Plan

- No issues related to slope stability or under seepage known at this time
- 100-year levee fix is to address multiple utility levee crossings



2. Rochester Levee 100-Year Levee Remediation Plan

- No issues related to slope stability or under seepage known at this time
- 100-year levee fixes may include:
 - Addressing multiple utility levee crossings
 - Addressing the existing MSE (Mechanical Stabilized Earth) wall with the following options:
- Install interim measures involving repairs to the wall or
- Incorporate into the Dallas Floodway Extension project
- A separate briefing will be forthcoming to address long term levee improvements



3. Dallas Floodway Levees (East and West) 100-Year Levee Remediation Plan

- 100-year levee fixes may include:
 - Measures to address multiple utility levee crossings
 - Cut-off walls or relief wells to address under seepage
 - Levee fattening to address stability



Schedule: 100-Year Levee Remediation Plan

- Original Schedule:

- ✓ Feb 2010: Submitted Draft Levee Remediation Plan
- ✓ Apr 2010: Completed geotechnical field investigations
- ✓ May 2010: Began design of proposed fixes
- ✓ Jun 2010: Submitted lab test results
- ✓ Aug 2010: Submitted design analyses and Draft Master Plan for the 100-year levee fixes
- ✓ Aug 2010: Submitted Draft Environmental Assessment document

Sept 2010: Advertise Construction

Nov 2010: Corps Approval and Construction Begins

✓ Indicates completed task



Schedule: 100-Year Levee Remediation Plan

- Schedule Changes:
 - As part of the Corps' analysis of the geotechnical information, it was determined that it may be necessary to perform site specific testing for fully softened shear strengths
 - The methodology the consultant utilized to determine these strengths was based on a correlation rather than testing
 - The Corps and City held a meeting of various experts in the geotechnical field on August 25-26, 2010 to determine the necessary path forward
 - At the workshop it was agreed upon to complete additional testing specifically for fully softened shear strengths



Schedule: 100-Year Levee Remediation Plan

- Schedule Changes:
 - Sept 2010 : Soil samples identified
 - Oct 2010: First of soil samples collected and shipped
 - Subsequent soil samples to be sent throughout the month
 - Oct 2010: Fully softened shear strength testing begins
 - Jan 2011: Mid-point of testing
 - Mar 2011: Testing and Results Complete
 - Advertisement of 100-year improvements, Corps Approval and Construction start are delayed a minimum of 4 to 6 months



Fully Softened Shear Strength Test

- Clay soils, like those found in and under the Dallas Floodway levees, exhibit a wide range of strengths depending on soil saturation, flood levels and flood duration
- This strength determines the soil's ability to resist failure
- These soils can lose strength over time
- “Fully softened shear strength” represents a strength value that takes these factors into account and provides a high level of certainty that the levees can be designed to perform as intended for many years



Fully Softened Shear Strength Test

- The Corps offered to have its Engineering Research and Development Center (ERDC) perform the tests, analyze the results and provide approved strength values. ERDC will:
 - Complete all tests and analyses in 6 months at a cost of \$958K, shared by the Corps and City
 - Make this their number one priority project
 - Provide results to the City throughout the testing period, with initial results available within 30 days
 - Provide quality-assured data, thereby reducing future technical review processes related to the testing



Minor Changes to the Current 100-Year Levee Remediation Plan

- **If the results** of the preliminary testing **indicate** that the proposed Draft Master Plan for the 100-year levee fixes requires **minor changes** of this document, then plan **will meet latest FEMA schedule**
 - The 100-year levee fixes will address multiple utility levee crossings and construction of cut-off walls
 - Based on these fixes, the construction could begin in July 2011 and end by December 2011
 - The fixes would be funded as originally proposed from the reallocation of the 2006 Bond Program, DWU funds and Stormwater Funds
 - City Consultant would certify the levees for 100-year event and submit plans to FEMA for accreditation upon completion of fixes



Extensive Changes to the Current 100-Year Levee Design Fixes

- **If the results** of the preliminary testing **indicate** that the proposed Draft Master Plan for the 100-year levee fixes requires **extensive changes** of this document, then the **City would not likely meet FEMA's latest remapping schedule**
- If this occurs, staff will brief the Council in January 2011 on the preliminary testing results and the various strategies and their impacts to the schedule of 100-year levee fixes



Impacts to Ongoing Projects

- There is likely a 4 to 6 month impact to the following project schedules currently under design:
 - Baker Pump Station
 - Sylvan Avenue Bridge Project
 - Balanced Vision Plan



Parallel Initiatives that May Affect Remapping

- FEMA – National Levee Issues Alliance (LIA)
 - Since the post-Katrina inspections have created levee issues nationally, concerned civic and business leaders have joined the National Levee Issues Alliance
 - The purpose of the LIA is to:
 - Reduce the adverse effects of levee decertification and flood zone re-designation; and
 - Identify resources and methodologies to assist local sponsors in expediting correction of flood protection project deficiencies.
 - Membership includes entities from Illinois, Louisiana, Mississippi and Texas (where initial Corps inspections occurred); additional membership is anticipated
 - US Chamber of Commerce has begun meeting with the LIA to address wide-spread concerns from the business community



Parallel Initiatives that May Affect Remapping (cont'd)

- FEMA – National Levee Issues Alliance (LIA) (cont'd)
 - Dallas participates in the LIA
 - The LIA is working on a number of national initiatives related to levee decertification
 - Creation of a Congressional Levee Caucus
 - Legislation related to levee certification and FEMA remapping
 - Seeking language that recognizes good faith efforts toward levee repair/interior drainage improvements and slows remapping activities
- Congress is expected to take up legislation addressing the National Flood Insurance Program (NFIP) which could provide the best opportunity in the new Congress (112th Congress) to address FEMA re-mapping



Parallel Initiatives that May Affect Remapping (cont'd)

- The LIA will be monitoring the November elections and plans to meet before the end of the year to discuss strategy and next steps for the 112th Congress
- Efforts undertaken by the LIA will focus on the 112th Congress



Next Steps

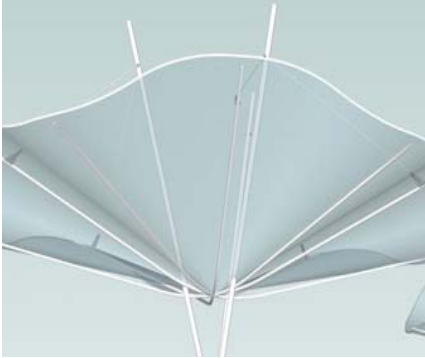
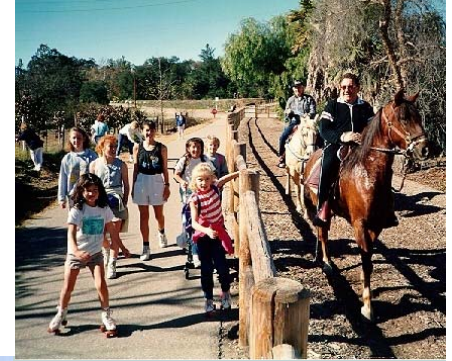
- **November 2010 through January 2011** – Launch Information Campaign
- **November 2010** - Brief TRCP Committee on the update of the Dallas Floodway Extension Project
- **December 2010** – Obtain Council authorization to supplement Consultant's (Jacobs) design contract for additional work on Baker and Pavaho Pump Stations
- **January 2011** - Brief the TRCP Committee on the preliminary look of the fully softened shear strength test results and its impact to the schedule and cost of the 100-year levee fixes



In Summary...

- The City and Corps are committed to protecting people and property
- FEMA's latest schedule for releasing revised flood maps has been adjusted from August 2011 to December 2011
- As part of the design of the 100-year levee fixes it was determined soil strength testing is necessary
- The City and Corps are committed to conducting the tests on an aggressive schedule, staying committed to meeting FEMA's remapping schedule
- If it appears FEMA's remapping schedule will not be met, new solutions for a path forward will be brought to Council for consideration in January 2011





DISCUSSION