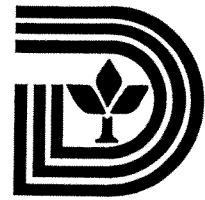


Memorandum



CITY OF DALLAS

DATE May 29th, 2009

TO Honorable Mayor & Members of the Dallas City Council

SUBJECT **US Army Corps of Engineers Periodic Inspection #9 Report Update**

On Wednesday, June 3rd you will be briefed on the US Army Corps of Engineers Periodic Inspection #9 Update. A copy of the US Army Corps of Engineers Periodic Inspection # 9 briefing will be provided to you no later than noon on Monday, June 1st.

Staff will be available to answer any questions you may have regarding this briefing.

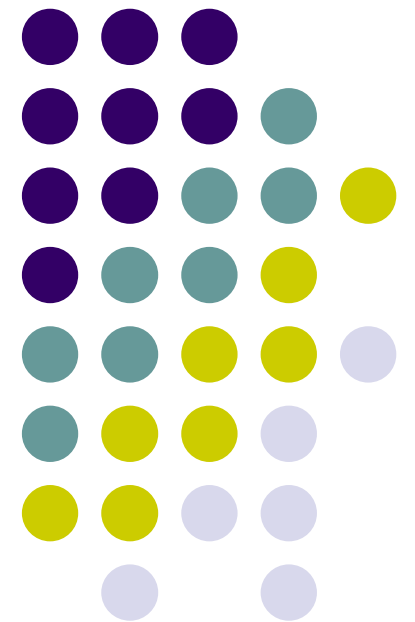
A handwritten signature in black ink, appearing to read 'Ramon F. Miguez'.

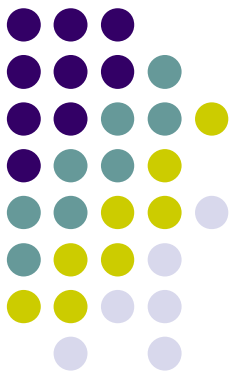
Ramon F. Miguez, P.E.
Assistant City Manager

C: Mary K. Suhm, City Manager
Deborah A. Watkins, City Secretary
Ryan S. Evans, First Assistant City Manager
Thomas P. Perkins, Jr., City Attorney
Ramon F. Miguez, P.E., Assistant City Manager
Craig D. Kinton, City Auditor
A.C. Gonzalez, Assistant City Manager
Judge C. Victor Lander, Administrative Judge
Forest E. Turner, Interim Assistant City Manager
Helena Stevens-Thompson, Assistant to the City Manager
Dave K. Cook, Chief Financial Officer

US Army Corps of Engineers Periodic Inspection Report 9 Update

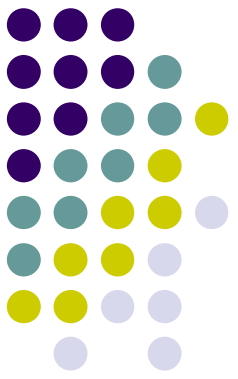
Dallas City Council
June 3, 2009





Briefing Overview

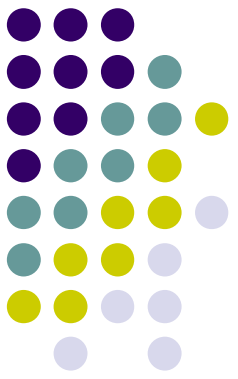
- Flood Protection is of primary importance to the City.
- The Dallas Floodway System protects an estimated \$7.3B of the City's tax base.
- The Corps performed Periodic Inspection Report 9 (PI 9) and rated the System Unacceptable.
- Ratings were based on visual inspection and engineering judgment.
- A System Study is required to identify and address these issues regardless of any current projects.
- Four City issued contracts valued at approximately \$29M are required for the Study.



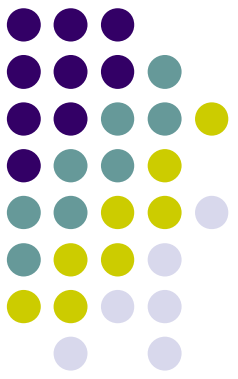
Purpose

- To provide an update of PI 9
- To outline the categories of work to confirm/address the findings in PI 9
- To update FEMA Levee Accreditation status
- To detail action items

PI 9 - Update

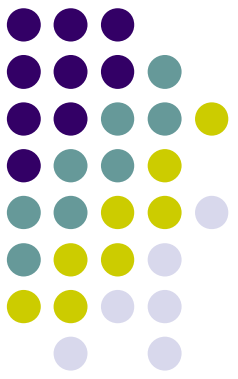


- The Dallas Floodway Project has historically received good, very good or excellent ratings.
- After Hurricane Katrina, the Corps set more rigorous and standardized criteria for inspecting levee systems ... National Levee Safety Program in 2007.



PI 9 - Update

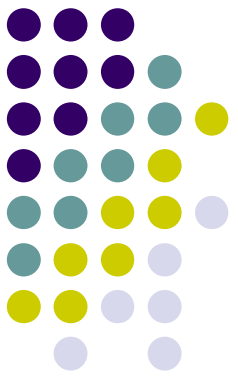
- 12/2007 – Corps performs PI 9 using new standards
- 12/2008 – City receives Very Good Rating for Annual Inspection
- 3/31/2009 - City receives PI 9 with Unacceptable rating
- 4/1/2009 - Dallas City Council is briefed



PI 9 - Update

- Corps used visual inspection and engineering judgment to rate items.
 - 206 items received ratings of minimally acceptable and unacceptable:
 - 138 minimally acceptable
 - 68 unacceptable
- Not all components of the floodway were inspected, but will be in the future.

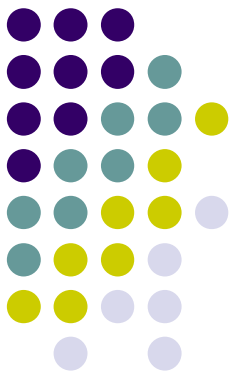
Periodic Inspection Report 9 Update



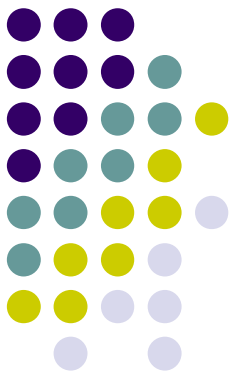
- Primary concerns expressed in PI 9 are related to seepage, stability and height of the levees.
- Major categories of unacceptable ratings include:
 - Insufficient crest height
 - Significant encroachments and penetrations in the levees
 - Damaged gate closures
 - Unstable structures
 - Severe desiccation cracking of the levees
 - Erosion
 - Vegetation
 - Siltation
 - Channel instability

Periodic Inspection Report 9

Findings



- The City and Corps categorized minimally acceptable and unacceptable items into two categories:
 - A. Operations and Maintenance
 - B. System Study (Additional Study and Analysis Required)

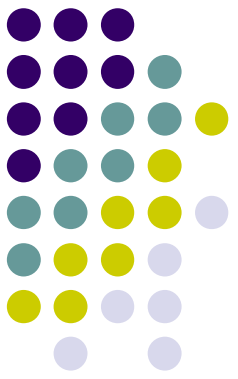


Operations and Maintenance

- A. Operations and Maintenance (O&M) – Repairs/funding are responsibility of City. Three subcategories:
1. O&M (Supported by Existing Resources)
 2. Enhanced O&M (Requires Additional Resources)
 3. Major Maintenance (Requires Engineered Solutions and Construction Contracts)

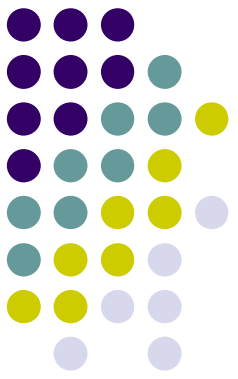
Note: The City must complete O&M repairs by April 1, 2010 to remain eligible for assistance under Public Law 84-99

A1 – Operations and Maintenance (Supported by Existing Resources)



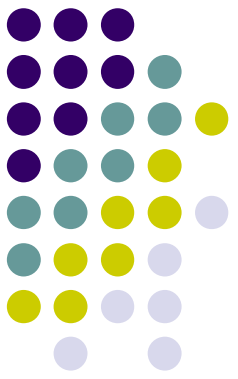
- Items are routine operations and maintenance that can be addressed with existing staff and equipment.
 - Items can be addressed without Corps approval.
 - Some work will be coordinated with partner agencies (i.e. TxDOT, DART, Utilities).
 - Staff has made progress on several items.
 - Additional work continues.

A1 – Operations and Maintenance (Supported by Existing Resources)



- The current O&M budget for the Dallas Floodway is \$7.3M.
 - Concrete and Structural Repair (Levee, Sump, Pump Station, Retaining Walls and Channel Repairs) - \$700K
 - Floodway Pump & Motor Operations (Mechanical, Electrical, and Technical Operations and Maintenance; Flooding Response) - \$2.9M
 - Earthen Maintenance & Repair; Vegetation Management and Debris Removal (Floodway, Levees, Sumps, Basins & Pump Stations) - \$1.5M
 - Other Flood Control (Lined & Earthen Channels, Stormwater Pipe Inspection, Flood Roadway Warning System) - \$2.2M

A1 – Operations and Maintenance (Supported by Existing Resources)

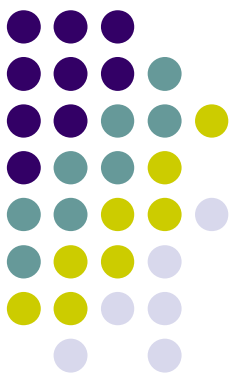


Damaged Concrete Flume – Able Station

Repaired Concrete Flume – Able Station



A1 – Operations and Maintenance (Supported by Existing Resources)

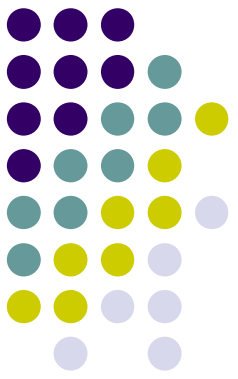


Sump Erosion Corrected – Able Sump

Sump Erosion – Able
Sump



A1 – Operations and Maintenance (Supported by Existing Resources)

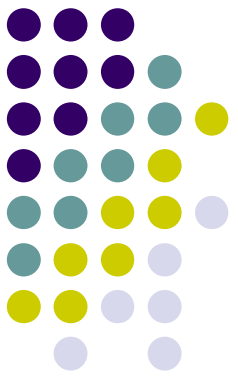


Levee Erosion Corrected –
Trinity Rail Express



Levee Erosion – Trinity Rail
Express

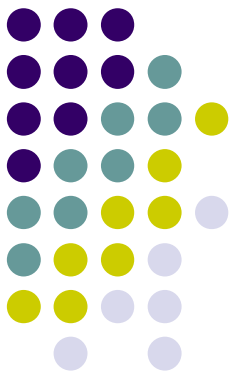
A1 – Operations and Maintenance (Supported by Existing Resources)



Example of Collected Debris along river channel – Santa Fe Bridge (Before and After)

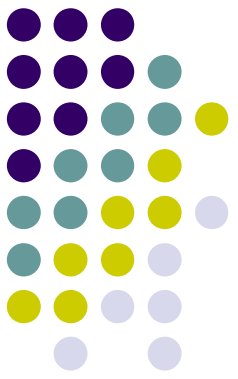


A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



- New inspection criteria requires higher level O&M of the entire Dallas Floodway.
- This will require additional staff and equipment.
- Some items may require additional engineering analysis and Corps approval.

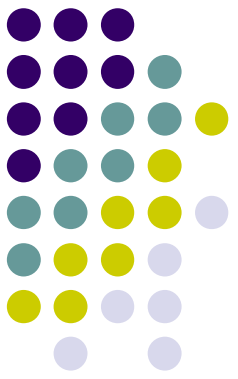
A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



- Enhanced O&M will require additional \$8.45M in FY 10.
- This is composed of ongoing and one time expenses.
- The additional annual ongoing costs are:

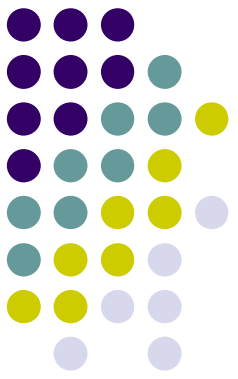
● Levee Mowing and Vegetation Management	\$1.26M
● Concrete Structural Maintenance	\$ 455K
● Erosion Control and Channel Maintenance	\$ 576K
● Mechanical and Structural Maintenance	\$ 290K
● Pump Station Facility Maintenance	\$ 192K
● Levee Grading Maintenance	\$ 35K
● Creek and Culvert Debris Removal	<u>\$1.70M</u>
TOTAL	\$4.508M

A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



- One time costs are need for:
 - Tree Removal & Levee Inspection (Approximately 2800 Trees) - \$3.0M
 - Access Control - \$950K
- TOTAL \$3.95M
- Storm water fees primary funding source for these activities.

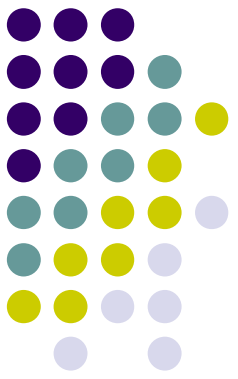
A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



Concrete Repairs for Outfall Structures



A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



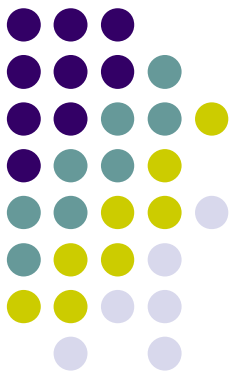
Trees within 15'



Trees within 50'



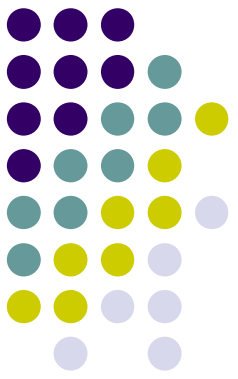
A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



Debris needs to be removed more frequently



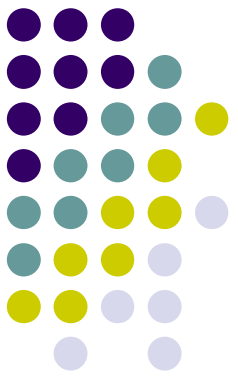
A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



Siltation and vegetation must be removed/mowed more frequently



A2 – Enhanced Operations and Maintenance (Requires Additional Resources)



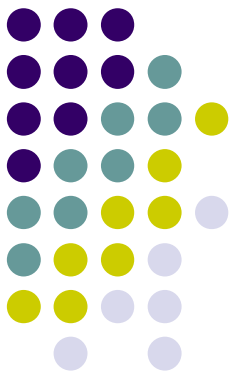
Channel slope stability and displaced rip rap



Damaged trash rack



A2 – Enhanced Operations and Maintenance (Requires Additional Resources)

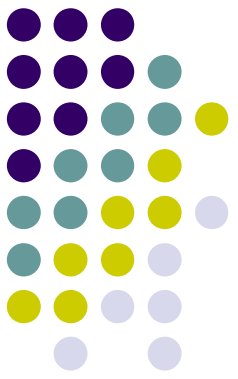


Baker Pump Station Maintenance

Delta pump Station Maintenance

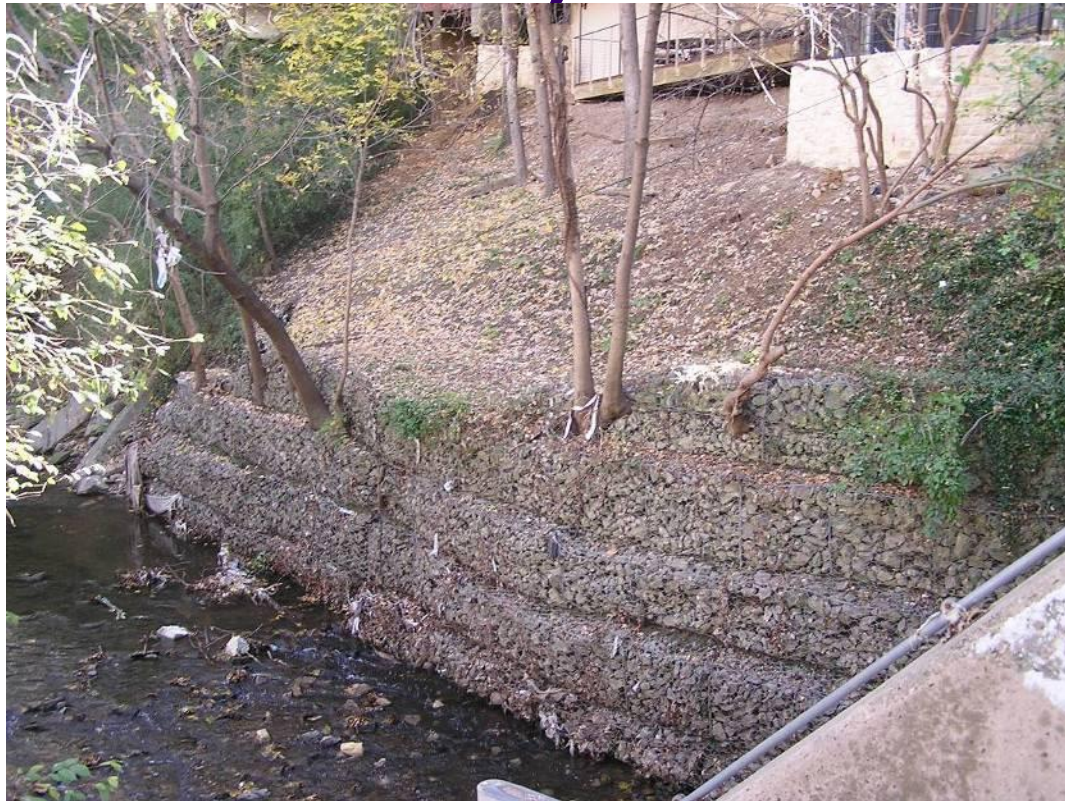
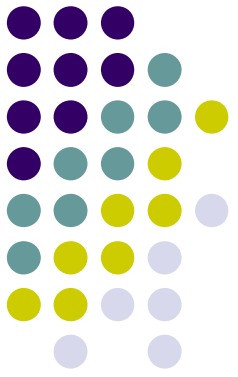


A3 – Major Maintenance (Requires Consulting and Construction Contracts)



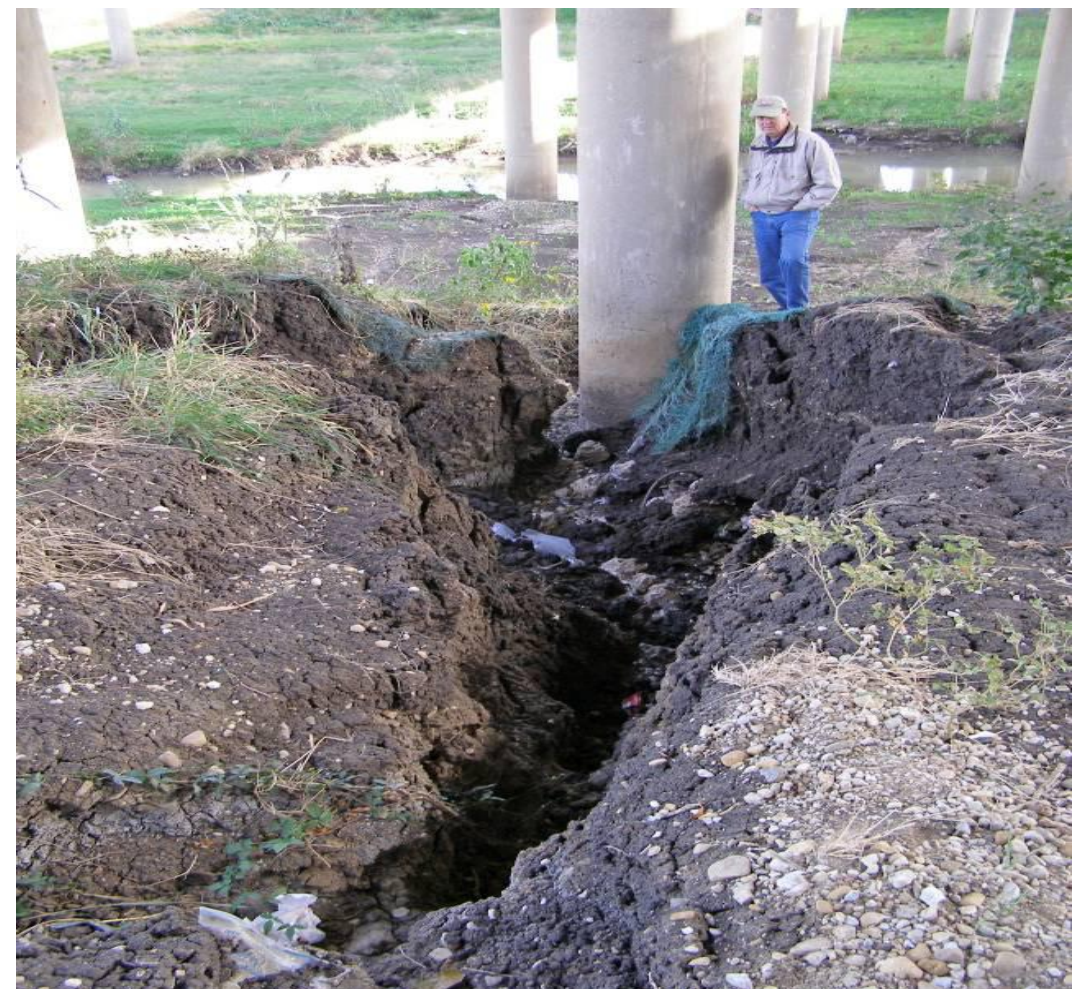
- Requires additional resources (to be determined) to complete.
- Needs contract engineering support and construction contracts.
- Requires Corps approval.
- Must be coordinated with applicable partner agencies (i.e. TxDOT, DART, Union Pacific Railroad, Utilities).

A3 – Major Maintenance (Requires Consulting and Construction Contracts)

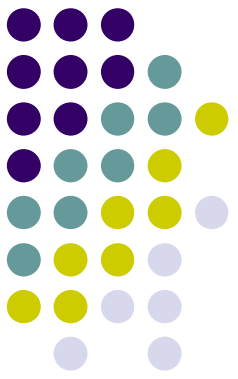


Tree removal related to gabion retaining walls (Turtle Creek)

Land side (low road) erosion – TxDOT/COD



A3 – Major Maintenance (Requires Consulting and Construction Contracts)

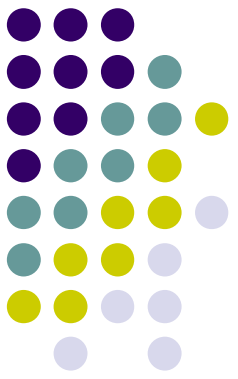


Other Agency – DART pier erosion



Seals are out at joints in floodwall near DART Bridge

A3 – Major Maintenance (Requires Consulting and Construction Contracts)

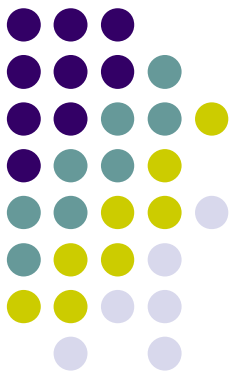


Stop Log Structure Missing Sill at
Union Pacific Railroad



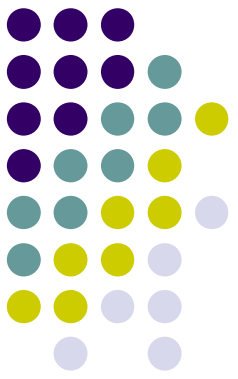
Turtle Creek Pressure Sewer
Wall – Separation of Wall 28

B – System Study (Additional Study and Analysis Required)



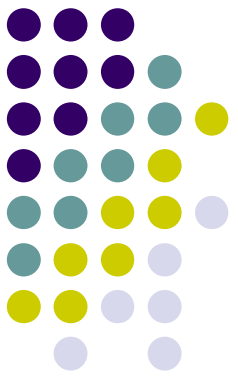
- B. System Study** – Corps has determined a thorough, comprehensive engineering analysis of levee system must be done to determine if levees can safely pass floods. The study will:
- Analyze potential for seepage under and through levees.
 - Analyze effects of pier penetrations.
 - Analyze slope stability issues.
 - Identify any necessary remediation work for 100 Year and 800 Year flood events (e.g. Levee Remediation Plan).
 - Identify funding source (City or combination of Corps/City).

B – System Study (Additional Study and Analysis Required)



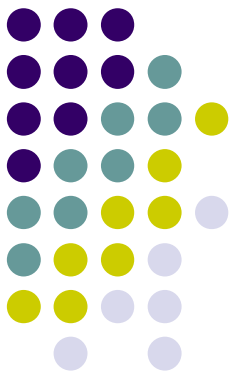
- More specifically, System Study includes:
 - Geotechnical analysis of entire floodway system
 - Hydraulic modeling to determine water carrying capacity
 - Development of Levee Remediation Plan
 - Investigation of a variety of solutions for stability and seepage issues
 - Cost benefit analysis of alternative solutions
 - Environmental impact analysis

B – System Study (Additional Study and Analysis Required)



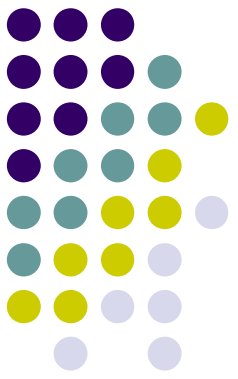
- Corps has determined they can assist in identifying and potentially implementing needed improvements due to:
 1. Pre-existing conditions and/or infrastructure in place when Corps completed levee upgrades in 1959.
 2. Changed conditions due to upstream urbanization.
- Because of this, Corps can assist with System Study.

FEMA Levee Accreditation Update



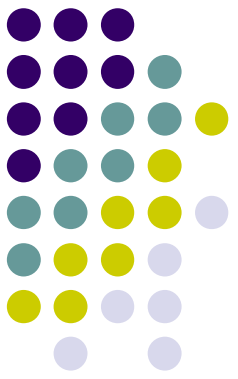
- FEMA standards require levees to perform to 100 Year flood event.
 - PI 9 questioned whether levees contain 100 Year flood.
 - Corps rescinded support for accreditation.
- FEMA began de-accreditation process in April 2009.
 - 18 to 24 months to completion.
- City must prove levees will perform during a 100 Year flood.

FEMA Levee Accreditation Update



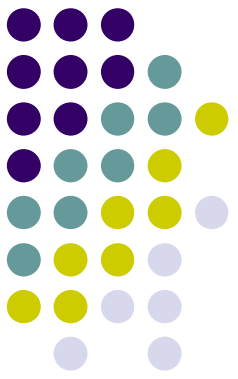
- Levee Remediation Plan portion of the System Study will ascertain if levees will protect adjacent properties during a 100 Year flood.
 - Plan will be complete in February 2010.
- Should this analysis demonstrate levees will perform as prescribed, then City will ask FEMA to keep current flood plain map.

FEMA Levee Accreditation Update



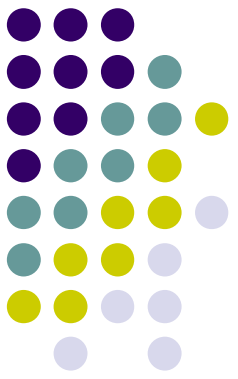
- Should the analysis demonstrate levees will not perform as prescribed:
 - Appropriate engineering and construction projects must be completed before levees can be accredited.
 - Informational meetings with neighborhoods, businesses and development community would begin in Spring 2010.

FEMA Levee Accreditation Update

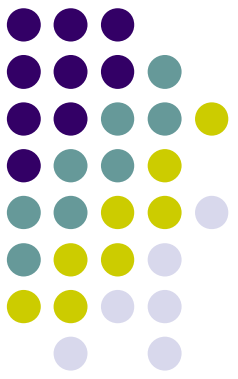


- City's goal ... complete construction of any repairs necessary to enable the levees to handle the 100-year flood by January 2011.
- If goal is met, FEMA will stop its remapping process.
- If goal is not met, new FEMA floodplain map will show no flood protection by levees.
 - Property owners who hold federally backed mortgages/loans will be required to obtain flood insurance.
 - New development/redevelopment will need to meet new development code criteria regarding floodplain reclamation.

Path Forward – System Study

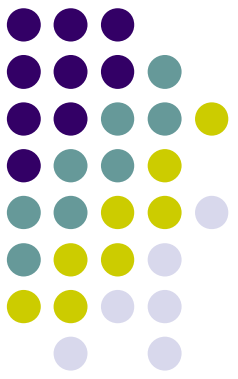


- Lengthy, detailed meetings have occurred between City, Corps, Federal Highways Administration (FHWA), TxDOT and NTTA since April.
- An aggressive schedule has been developed to complete the System Study.
- To achieve this aggressive schedule, all agencies must work diligently and meet individual deadlines.



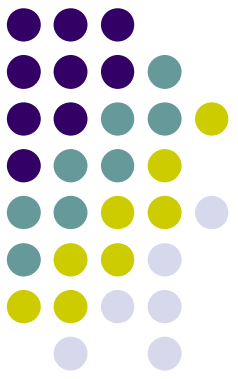
Path Forward – System Study

- The Trinity River Corridor Project (TRCP) has always been, first and foremost, a flood control project with plans to address several items raised by PI 9, such as levee height and slope stability.
- The TRCP allows us to move forward, cooperatively, with our federal partners.
- As a result, City is in unique position to immediately begin and to cost share in System Study with Corps.



Path Forward – Action Items

- Contract is required to cost share with Corps for System Study (known as a Feasibility Cost Share Agreement or FCSA).
 - City anticipates bringing FCSA to Council for approval in Fall.
- For Corps to continue work until Fall, City can supplement contract with North Texas Council of Governments (NTCOG).
 - NTCOG currently has existing contract with Corps to work on regional efforts related to Trinity River Basin that can be modified to include this work.

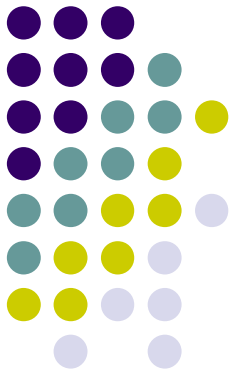


Path Forward – Action Items

- City can advance funding to Corps and award contracts to expedite and complete the System Study.
- City currently has three contracts that directly tie to existing and proposed study work:
 - Floodplain Management Contract with HNTB
 - Trinity Lakes Design Contract with CH2MHILL
 - Trinity Parkway Contract with NTTA

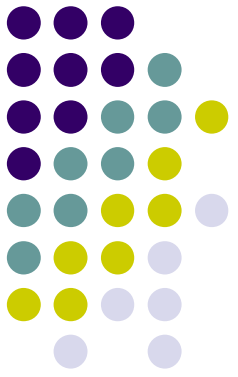
Path Forward – HNTB

Supplemental Agreement



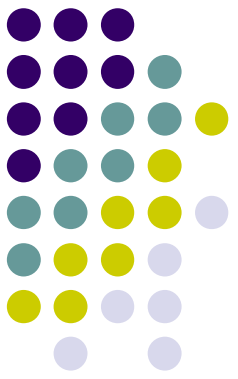
- Staff proposes \$25.5M supplemental agreement to current Floodplain Management Contract with HNTB.
- Supplemental agreement has been developed with:
 - Set fees for certain work elements.
 - Special services that require prior authorization to proceed.
- Depending on results from System Study, some portions of funding for engineering support may not be required.

Path Forward – HNTB Supplemental Agreement



- Major components of the supplement include:
 - \$14.6M for soil borings, analysis and hydraulic modeling
 - \$6.3M for engineering support to address work in categories A2 and A3
 - \$2.8M for Maintenance Deficiency Correction Plan (MDCP), levee remediation plan, policy integration and miscellaneous engineering support
 - \$700K for reimbursable expenses
 - \$550K for reviews and mock inspection (including detailed report findings) of the Dallas Floodway and coordination with partner agencies
 - \$400K for FEMA accreditation efforts
- About half of these costs will apply towards cost share requirements of Dallas Floodway Project with Corps.

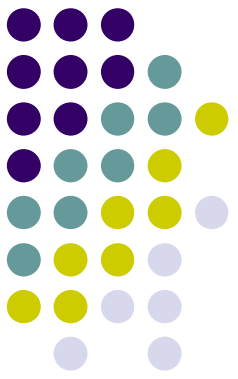
Path Forward – HNTB Supplemental Agreement



HNTB -

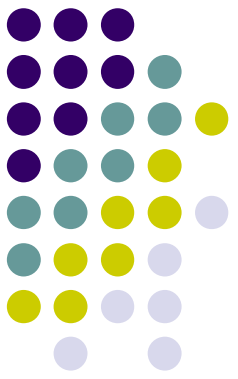
- Currently provides floodplain program management services for 2006 Bond Program for City.
- Serves as Corridor Manager for NTTA and is oversees the geotechnical work for Trinity Parkway.
- Is a leader among engineering firms with respect to working with Corps.
- Has a number of retired, high level Corps employees on staff who can assist with District, Division and Head Quarters processes.

Path Forward – CH2MHILL Supplemental Agreement



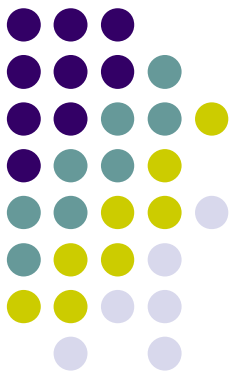
- City is proposing supplement to lakes design contract with CH2MHILL, not to exceed \$600K.
 - CH2MHILL has been working with hydraulic analysis for Dallas Floodway.
 - Major components of supplement contract include continued work towards completion of EIS portion of System Study:
 - Environmental and Archaeological Testing
 - Hydraulic Modeling
 - This action will apply towards cost share requirements of Dallas Floodway Project with Corps.

Path Forward – Interim FCSA with NCTCOG



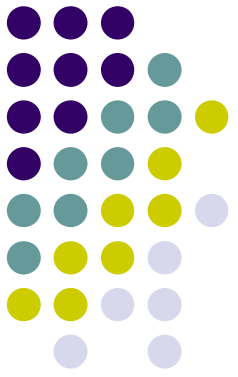
- City is proposing entering into interim FCSA with NCTCOG, not to exceed \$1.8M.
 - NCTCOG currently has active FCSA for Upper Trinity River Basin that can provide Corps with ability to continue working on System Study until final FCSA this fall.
 - Major components will include:
 - Environmental impact analysis
 - Deed Research
 - Unsteady flow hydraulic model
 - Data compilation of property values behind levees

Path Forward – NTTA Supplemental Agreement



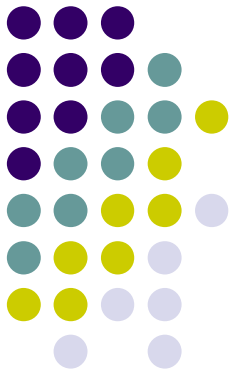
- City is proposing entering into supplemental agreement with NTTA, not to exceed \$1.3M.
- FHWA has determined that a Limited Scope Supplement to Supplemental Draft Environmental Impact Statement (LSSSDEIS) needs to occur.
- Therefore, City will need to enter into supplemental agreement with NTTA to address components of Trinity Parkway.

Path Forward – Final FCSPA with Corps

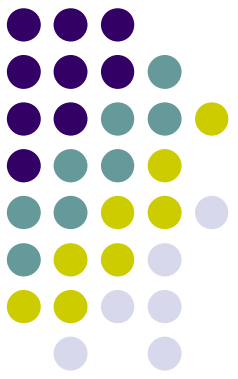


- City will need to enter into FCSPA for Dallas Floodway with Corps this fall.
- Cost for this action is unknown at this time.

Project Impacts

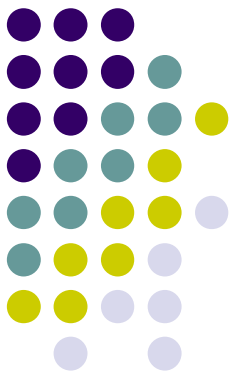


- It is the goal to complete System Study by spring 2012 which would result in:
 - Construction for Dallas Floodway delayed 10 months.
 - Trinity Parkway construction delayed 20 months.
- Schedule assumes design of levee improvements and Trinity Parkway would proceed concurrent to environmental permitting.



Next Steps - Council Action

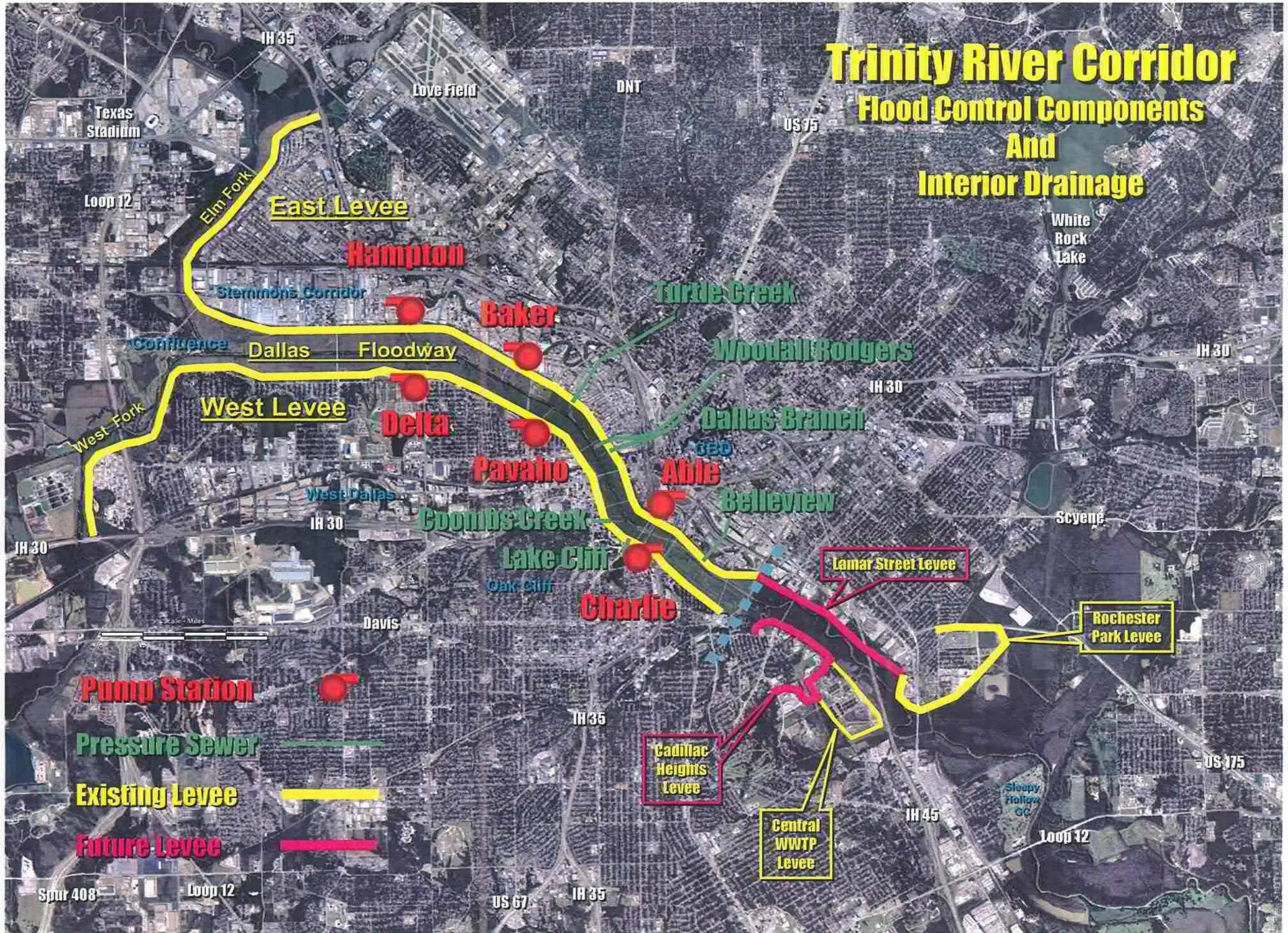
- To confirm/address PI 9 findings, Council will consider the following actions on June 10, 2009 City Council Addendum:
 1. Approval of Supplemental Agreement with HNTB for \$25.5M.
 2. Approval of Supplemental Agreement with CH2MHILL for \$600K.
 3. Approval of Interim Feasibility Cost Share Agreement with North Texas Council of Governments for \$1.8M.
 4. Approval of Supplemental Agreement with NTTA for \$1.3M.



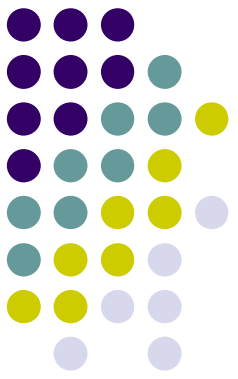
Appendix Summary

- A. Dallas Floodway Levee System Map
- B. Funding strategy for the June 10th Action Items
- C. HNTB Supplemental Agreement M/WBE Participation
- D. CH2MHILL Supplemental Agreement M/WBE Participation
- E. Major Tasks Flow Chart

Appendix A – Dallas Floodway Levee System Map

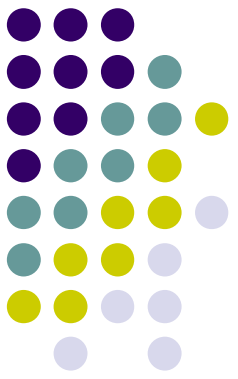


Appendix B – Funding Strategy



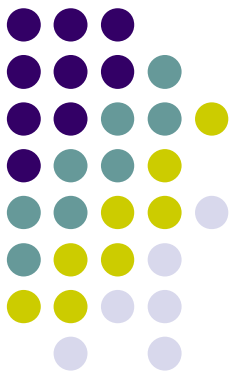
- 1998 Bond Program and 2006 Bond Program included \$571M to address flood control initiatives and other associated improvements to Dallas Floodway.
 - Since this work will provide flood control for City, this is an appropriate source of funding.
 - Using this source of funding will require deferring a project until next bond program

Appendix B – Funding Strategy



- Staff recommends construction for Able Pump Station be delayed to fund this action.
 - Design and right of way acquisition for Able Pump Station will continue.
 - Delays construction 12-18 months.
- Bonds scheduled to be sold for Able Pump Station in November 2010. Until bonds are sold, funding will be borrowed from other projects in 1998 Trinity River Corridor Project proposition.

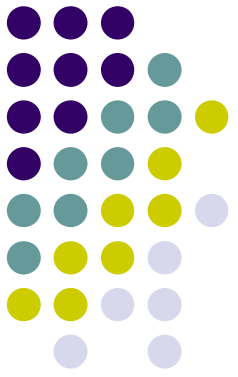
Appendix C - HNTB Proposed M/WBE Participation



Mas-Tek Engineering & Associates, Inc.	Geotechnical Investigation	\$ 3,200,000	12.5%
HVJ Associates Inc.	Geotechnical Investigation	\$ 2,000,000	7.8%
Jaster-Quintanilla	Levee Condition Assessment and Engineer Support Services	\$ 335,000	1.3%
Pacheco Koch Consulting Engineers, Inc.	Surveying and Engineer Support Services	\$ 600,000	2.4%
Gupta & Associates, Inc	Levee Condition Assessment and Engineer Support Services	\$ 335,000	1.3%
Trevino Engineering Support Services LLC	Printing, Plotting and Reproduction	\$ 110,000	0.4%
Urban Engineers Group, Inc.	Engineer Support Services	\$ 265,000	1.0%

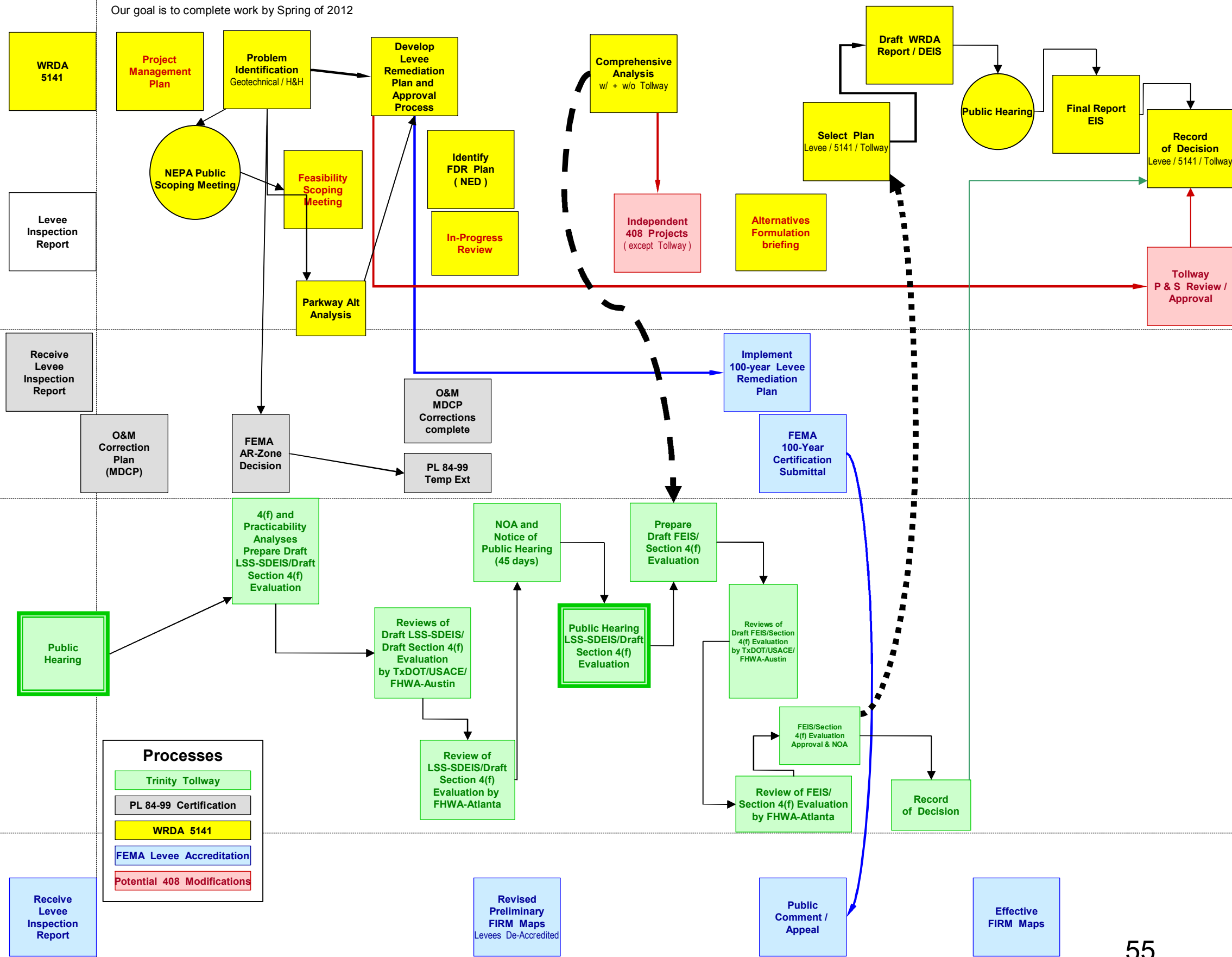
Appendix D - CH2MHILL

Proposed M/WBE Participation



Xenco Laboratories	Environmental Testing	\$150,000	25.6%
Geo-Marine, Inc.	Archeological Support	\$ 82,465	14.0%
Gorrondonna Associates	Surveying and Engineer Support Services	\$ 20,000	3.40%
APM and Associates	Engineer Support Services	\$ 2,273	0.03%

Our goal is to complete work by Spring of 2012



Processes

- Trinity Tollway
- PL 84-99 Certification
- WRDA 5141
- FEMA Levee Accreditation
- Potential 408 Modifications