

# Memorandum



DATE January 13, 2011

TO Trinity River Corridor Project Committee Members:  
David A. Neumann (Chairman)                      Vonciel Jones Hill  
Steve Salazar (Vice-Chair)                      Delia D. Jasso  
Mayor Pro Tem Dwaine Caraway                      Linda Koop  
Deputy Mayor Pro Tem Pauline Medrano                      Ann Margolin  
Carolyn R. Davis

SUBJECT Interior Drainage System – Pump Stations Update

At the next Trinity River Corridor Project Committee meeting on Tuesday, January 18, 2011, the attached briefing will be presented by Kelly High, Director of the Trinity Watershed Management Department. This briefing provides background on the City's effort related to the Interior Drainage System - Pump Stations ongoing design and construction progress.

Please contact me if you have questions.

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



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DALLAS

## Attachment

Cc: 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, Assistant 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

# Interior Drainage System - Pump Stations Update

Trinity River Corridor Project Committee  
January 18, 2011



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# Purpose

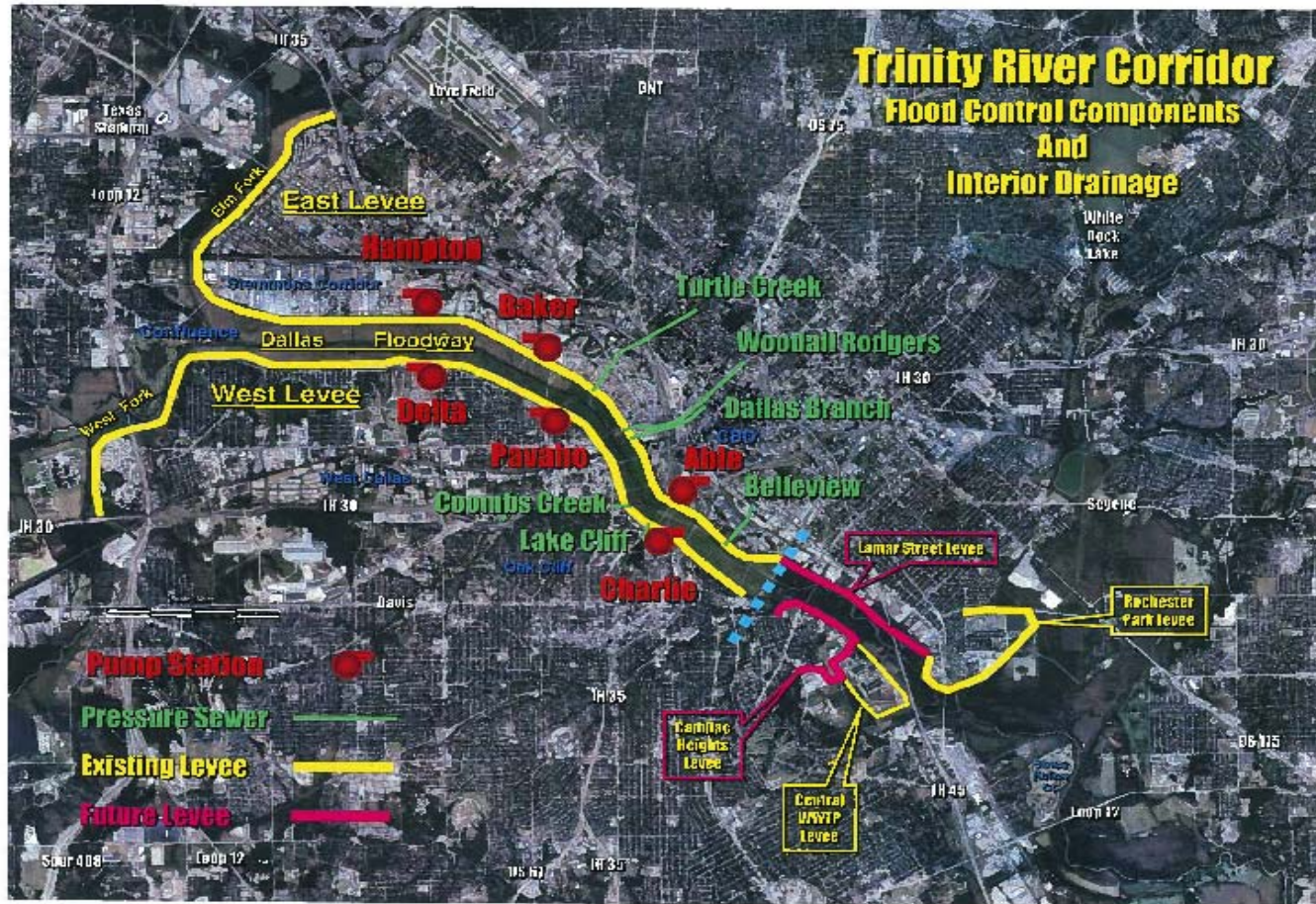
- Provide background on the City's efforts related to the Interior Drainage System – Pump Stations
- Provide status of pump stations design and construction progress
- Outline recommended City Council next steps



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# Interior Drainage and Pump Stations Map



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# Background

- In 2003 the City identified a need to look at the existing Interior Drainage and associated pump stations that were constructed during the 1930s through 1950s
  - Contract was initiated with Jacobs Engineering
- Preliminary reports indicated a need to upgrade or replace existing pump stations and add a pump station:
  - Charlie Pump Station
  - Delta Pump Station
  - Hampton Pump Station
  - Trinity Portland Pump Station (New)
  - Sump A (Referred to as Able Pump Station)
  - Hampton/Oak Lawn Pump Station (Referred to as Baker Pump Station)
  - Pavaho Pump Station



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# Background

- Two approaches for funding these projects were identified:
  - Future Bond Programs
  - Federal Funds Available by the Water Resources Development Act (WRDA)-2007
- City began working on both initiatives and included these projects in the Needs Inventory



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# Background

- The 2006 Bond Program included \$142M in Proposition No. 2 for three Pump Stations:
  - Able Pump Station (Cost allocated - \$56.1M)
  - Baker Pump Station (Cost allocated - \$48.1M)
  - Pavaho Pump Station (Cost allocated - \$37.8M)
- Additional funding would be required in future bond programs for the remaining pump stations



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# Background

- In 2007, the federal delegation was successful in authorizing the Dallas Floodway Project as part of the Water Resources Development Act of 2007 (Section 5141)
  - Included Balanced Vision Plan, levee modifications and pump stations
  - Provides a cost share for design and construction
  - Requires annual appropriations from Congress
  - Design 50% City / 50% Corps ; Construction 35% City / 65% Corps
  - Allowed for City to design and construct pump stations in advance of the Corps action, if approved by the Corps
  - Required that all City features be designed to 35% and reviewed by Corps to be included in the on-going Dallas Floodway Project Study



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# Background

- To meet federal requirements for inclusion in Dallas Floodway Project Study, the City entered into a contract with URS in November 2008 for \$3.6M to complete 35% design of:
  - Charlie Pump Station
  - Delta Pump Station
  - Hampton Pump Station
  - Nobles Branch Culverts
  - Trinity-Portland Pump Station
- All of these pump stations require additional funds to complete design and construction



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# **Pump Station Design Update Future Funding Needs**



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# Pump Stations - Design Update

- Charlie Pump Station - Originally built in early 1932
  - Serves The Area Around The Bottoms Community with current capacity of 80,000 Gallons Per Minute (GPM)
  - The new pump station will accommodate approximately 225,000 Gallons Per Minute (GPM)
  - 35% Design is complete
  - Current estimate for design and construction is \$34.5M
  - Change Order No. 1 for relocating the Pump Station and additional geotechnical analysis will be on the February 23, 2011 Council agenda



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# Pump Stations - Design Update

- Delta Pump Station – Originally built in early 1932
  - Serves West Dallas Community Near Hampton Bridge with current capacity of 80,000 Gallons Per Minute (GPM)
  - The design will upgrade and rehabilitate existing Delta Pumping Station
  - 35% Design is complete
  - Current estimate for design and construction is \$3.5M



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# Pump Stations - Design Update

- Hampton Pump Station – Originally built in 1955
  - Serves North West Dallas Community with current capacity of 600,000 Gallons Per Minute (GPM)
  - The new pump station will accommodate approximately 700,000 GPM, bringing the total pumping capacity to 1,100,000 GPM
  - 35% Design is complete
  - Current estimate for design and construction is \$60M



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# Pump Stations - Design Update

- Trinity Portland Pump Station – New Pump Station
  - The new pump station will accommodate approximately 250,000 Gallons Per Minute (GPM)
  - Serves South West Dallas Community
  - 35% Design is complete
  - Current estimate for design and construction is \$31.5M



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# **Pump Station Design Update 2006 Bond Program**



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# Pump Stations - Design Update

- Able Pump Station – Originally Built in 1932
  - In June 2008, the City entered into a contract with HDR Engineering, Inc. for \$4.33M for design of Able Pump Station and associated sump improvements
  - Serves the Central Business District Community with current capacity of 220,000 Gallons Per Minute (GPM)
  - The new pump station will accommodate approximately 875,000 Gallons Per Minute (GPM), decommission the existing pump station and design sump improvement for hydraulic and recreational purposes
  - In April 2010, Council was briefed on using a portion of the \$56.1M in 2006 Bond funds for Able Pump Station and allocating it for the 100-yr levee remediation construction fixes



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# Pump Stations - Design Update

- Able Pump Station
  - Remaining funds to be used for design & ROW acquisition
  - To prepare for the next bond program staff is recommending moving forward with a supplement of \$5M for 100% design of the Pump Station and Sump areas. Council will consider this on its 2/23 agenda.
  - Construction Cost to be funded in a future Bond
  - Able Pump Station and associated improvements will be briefed at a later date



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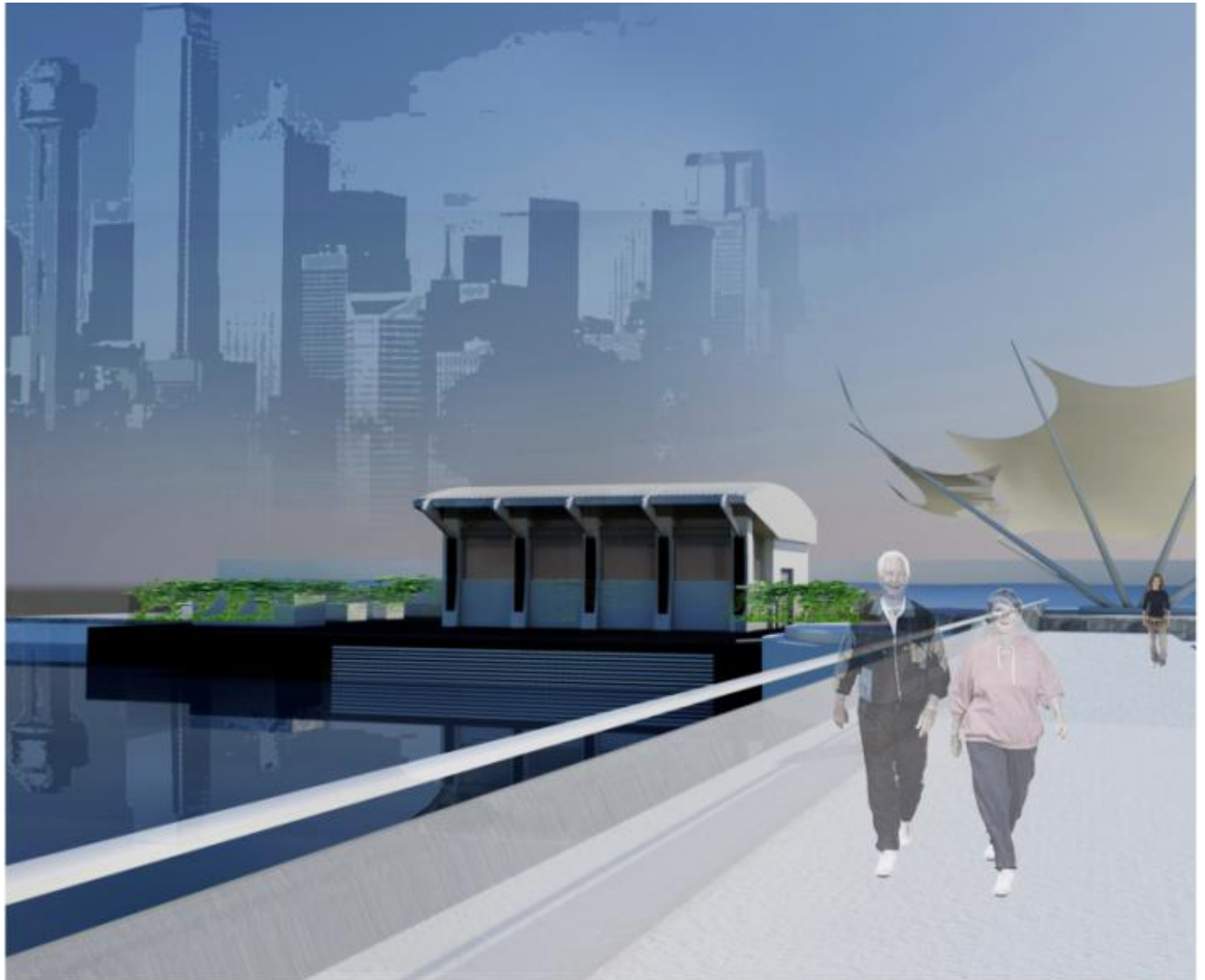
# Existing Able Storm Water Pump Station



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# Proposed Able Pump Station



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# Pump Stations - Design Update

- Baker Pump Station- Originally Built in 1929
  - Serves the Design District and Stemmons Corridor with current capacity of 600,000 Gallons Per Minute (GPM)
  - Contract was initiated in June 2007 with \$4.5M for 100% design
  - The new pump station will accommodate approximately 700,000 GPM, bringing the total pumping capacity to 1,100,000 GPM
  - Design is at 95% and awaiting fully softened shear strength test results to determine if impacts to the slope of the levee or levee template result in additional design modifications
  - SA #3 is required for the additional Corps requirement to complete the design at a cost of \$2.1M. Council will consider this on 2/23/11 agenda
  - Estimated schedule has been delayed 4-6 months and construction is scheduled to begin in late Summer 2011
  - Current budget for design and construction is estimated at \$60M



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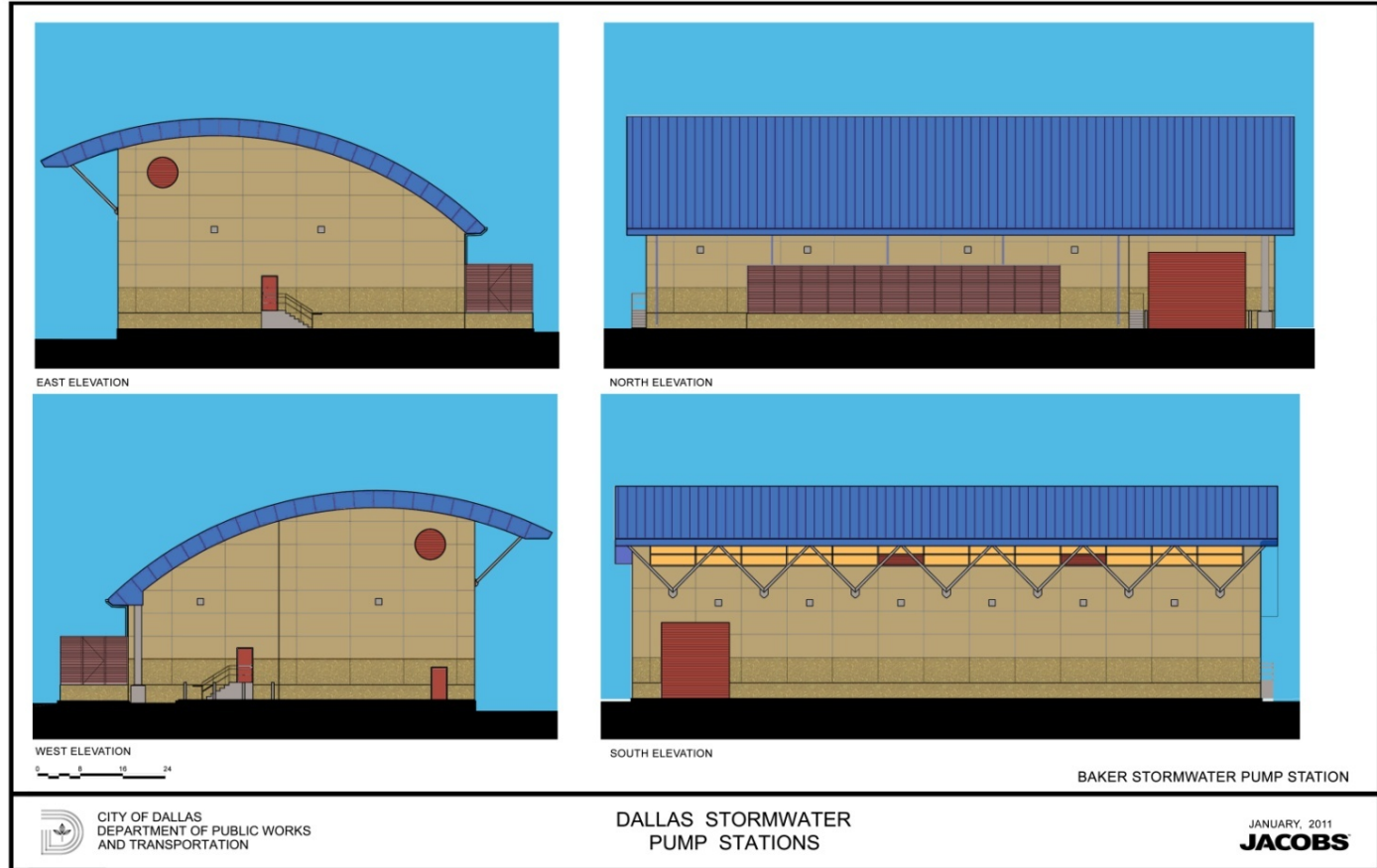
# Existing Baker Pump Station



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# Proposed Baker Pump Station



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# Construction Update – Pavaho Pump Station

- April 2010 - Jacobs Engineering completed design of 375,000 GPM pump station
- June 2010 - City Council approved a \$26.5M construction contract with Bar Constructors
- September 2010 – City Council and West Dallas Community Groundbreaking Ceremony



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# Construction Update – Pavaho Pump Station

- Several additional tasks have been identified that are necessary to complete the construction by August 2012 (Pending Change Order and Special Use Permit)
  - Tasks were identified by City Staff
- A Special Use Permit is necessary due to the additional land that the pump station will occupy
  - This will ensure that no future questions will arise related to land use



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# Construction Update – Pavaho Pump Station

## Change Order No.1 (Approximately \$110,000)

- Modifications to the plans and specification to increase efficiency of the Pavaho Pump Station include:
  - Addition of a Sand Filter underground to relieve ground water pressure
  - Removal of a wing wall at existing pump station site that will encroach on new pump station
  - Pier reinforcement steel modification
- Council consideration of this Change Order is scheduled for 2/23/11
- Construction is still projected to be completed in June 2012



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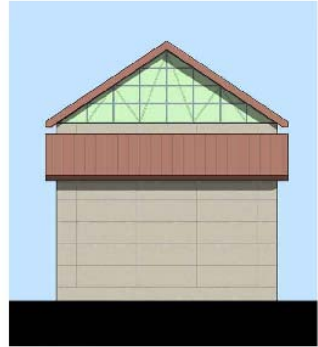
# Existing Pavaho Pump Station



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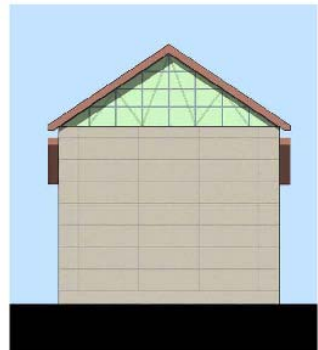
# Proposed Pavaho Pump Station



EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION

4 PAVAHO STORMWATER PUMP STATION



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CITY OF DALLAS  
DEPARTMENT OF PUBLIC WORKS  
AND TRANSPORTATION

DALLAS STORMWATER  
PUMP STATIONS

JANUARY, 2009  
**JACOBS**



# Construction Update – Pavaho Pump Station



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**Concrete Placement**



# Construction Update – Pavaho Pump Station



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**Tensioning Rebar**



# Construction Update – Pavaho Pump Station



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**Concrete Mass Pour**



# Construction Update – Pavaho Pump Station



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**Excavation for Concrete Pour**

# Next Steps – City Council Actions

- Staff is recommending Committee approval to place the following actions on the February 23, 2011 City Council Agenda:
  - Supplement Agreement #3 to the Jacobs Contract for \$2.2M for the Hampton/ Oaklawn (Baker) and Pavaho Pump Stations
  - Supplement Agreement #1 to the HDR Contract for \$5M for Levee Drainage System (Able Pump Station and Sump A Improvements)
  - Supplement Agreement #1 to the URS Contract for \$0.25M for completing the 35% Plans for other Pump Stations
  - Change Order #1 for an estimated \$0.11M to Bar Constructors for the Pavaho Pump Station Construction Contract.



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# Questions?



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