Houston | Bay Area Storm Water Flooding Forum

Hurricane Harvey Impacts

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Hurricane Harvey

- Category 4 hurricane - landfall August 25, 2017
- Estimated $150 to $180 billion in Harvey damages statewide
- Damage to structures caused by rainfall, bayou flooding, and release of water from Addicks/Barker reservoirs and San Jacinto River
Hurricane Harvey Rainfall

- **51.88 inches** of rain recorded by a gauge near Mont Belvieu, according to the National Weather Service

- **49.77 inches** - before Harvey, this was the highest annual rainfall recorded at Bush Intercontinental Airport

- **16.07 inches** – August 27, 2017, wettest day on record in Houston; August 26 experienced 8.37 inches, making it the fifth wettest, according to the National Weather Service
Hurricane Harvey Impacts

- 126,000 housing units affected
- 192,000 FEMA individual assistance
- $2.4 billion damaged city facilities and infrastructure
- 2,500 roadway miles inundated
- 650,000 HPD overtime hours
- 1.2 million cubic yards debris
Damage Assessments in the Floodplain
Federal Disaster Relief

- Federal funding - $15 billion initial installment
- $35 billion relief bill signed into law October 26
- Third supplemental expected

City of Houston initial requests:
- Residential hazard mitigation/housing assistance - $13.5 billion
- Local drainage infrastructure projects - $5 billion
- Smart city technology and green infrastructure $1.7 billion
- Infrastructure consolidation - $10 billion
Immediate priorities
• Debris removal – second pass to be completed December 2017
• Housing – RFP out for housing program manager
• RFPs will follow for home repair and case management

Longer-term priorities
• $74 billion in identified recovery, resilience, and mitigation projects (includes $25 billion HCFCD, $12 billion coastal spine protection, $37 billion city projects)
Mitigation Strategies

Neighborhood-by-neighborhood approach

- Structural Project
- Acquisition
- Elevation or Mitigation Reconstruction
Resilience Efforts

- Integrate stormwater management into Lake Houston
- Increase capacity of Buffalo Bayou downstream of reservoirs
- Protect critical water and sewer plant facilities
Resilience Efforts

- Reevaluate need to update regulatory floodplain
- Develop in-city watershed detention plan
- Reevaluate detention criteria and floodplain ordinance
- Map risk areas post-federal projects for buyout opportunities or structural alternatives
- Explore opportunities for redevelopment of high-risk areas
Beyond the Federal Projects
Resilience Efforts

- Determine non-riverine flood zones
- Develop citywide detention plan for future mitigation
- Develop potential service area impact fee
- Advance green infrastructure program

Baseline Urban Flooding Mitigation
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