



City of Houston Update

November 13, 2009

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Today's Agenda



- City's Role
- Community Rating System
- Local Drainage Projects
- Capital Improvements
- Agency Collaboration
- Multi-use Concept
- Water Quality



City of Houston Role



- Establish Level of Service and Design Criteria
- Current Design Standards (2005 Revisions)
 - Pipes carry 2-year storm (1-2” of rainfall in one hour)
 - Street Right-of-Way to hold and convey 100-year storm (4-5” in one hour)
- Build and Maintain Improvements
- Permit and Regulate Development
 - Both Public and Private
 - Citywide standards
 - Floodplain regulations



City of Houston Role



- Comply with FEMA requirements to participate in the National Flood Insurance Program
- Participate in the Community Rating System
- Flooding & Drainage Committee
 - Stakeholder Advisory Group
- Partner with other entities to address flooding on a regional bases



Community Rating System



On October 1, 2009 – City of Houston is a Class 5 Community

- CRS recognizes and encourages floodplain management activities that exceed the minimum standards of the NFIP by:
 - Reducing Flood Losses
 - Facilitate Accurate Insurance Ratings
 - Promote the Awareness of Flood Insurance

City of Houston Policy Summary:

- 140,000 total policies
- 50,000 SFHA policies
- \$2M savings per 5% reduction for SFHA policies
- \$10M annual premium savings for Class 5 Rating

Premium Reduction		
Class	SFHA*	Non-SFHA
10	0	0
9	5%	5%
8	10%	5%
7	15%	5%
6	20%	10%
5	25%	10%

* Special Flood Hazard Area



Local Drainage Projects



- Larger than routine maintenance
- Smaller than traditional Capital Improvement
- Shorter design and construction time frame
- Both City of Houston and outside contractors can perform projects



Capital Improvements



- Large storm sewer construction
 - Sections of subdivisions
 - Associated with Major Thoroughfare
 - Detention or Mitigation
 - Stormwater pump stations at underpasses
- Design usually lasts 1-2 years
- Construction generally lasts 1 -2 years
- Construct 8-10 large projects per year



Agency Collaboration



- PWE is working with the Harris County Flood Control District and Parks & Recreation Department to jointly develop multi-use regional detention basins.



Multi-Use Concept



- Regional Detention Program
 - Increase detention efficiency – larger basins on one site use less land than multiple basins at multiple sites
 - Ability to address storm water quality as well as detention requirements
 - Create large open space areas for park and other uses when detention volume is not being used
 - Reduce maintenance costs



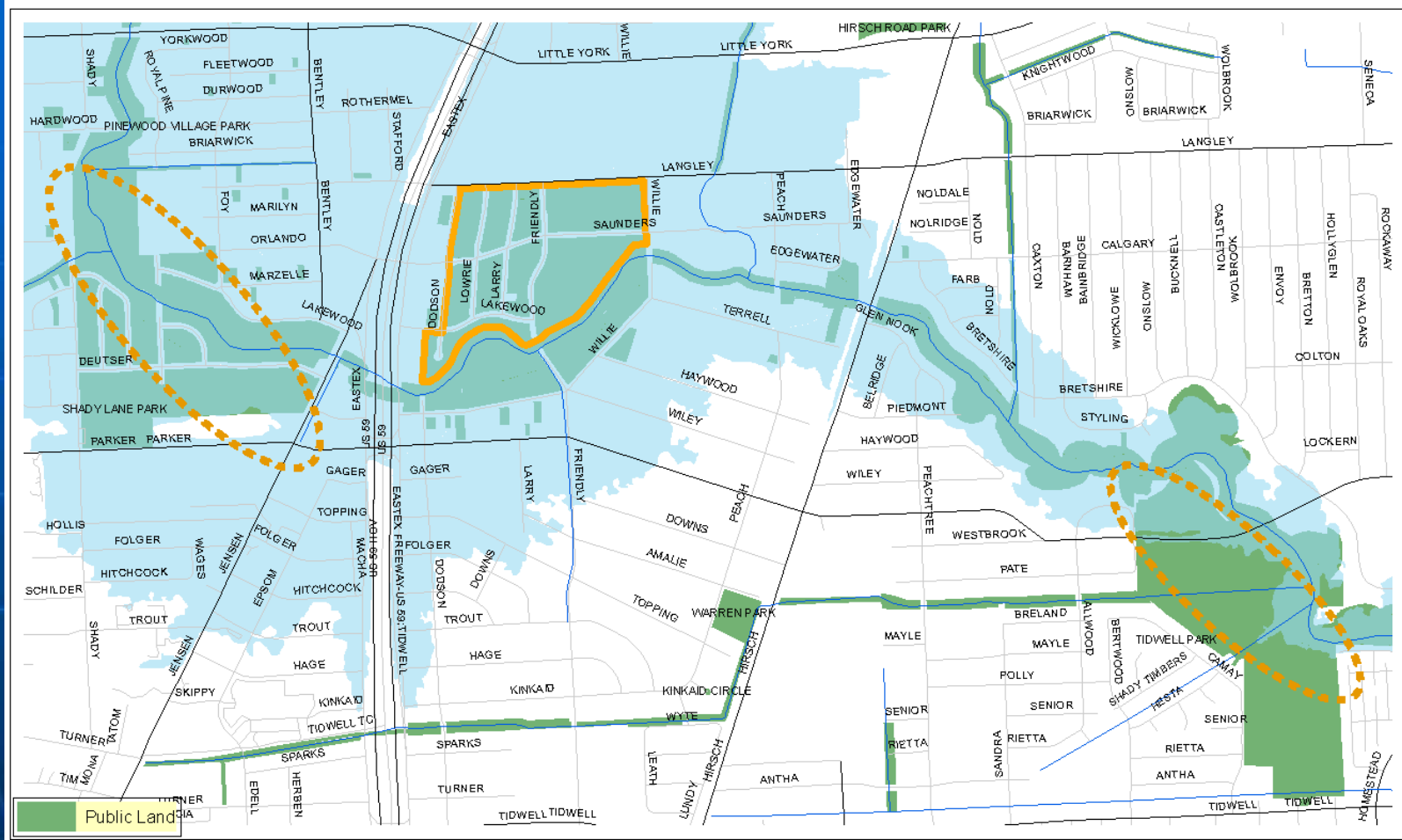
Keith Weiss Park Detention Basin



- More than 900 acre-feet of detention by developing 112 of underutilized park space
- Partnership with Harris County Flood Control District



Halls Bayou



- Up to 1,500 acre-feet
- Links up to 5 City Parks



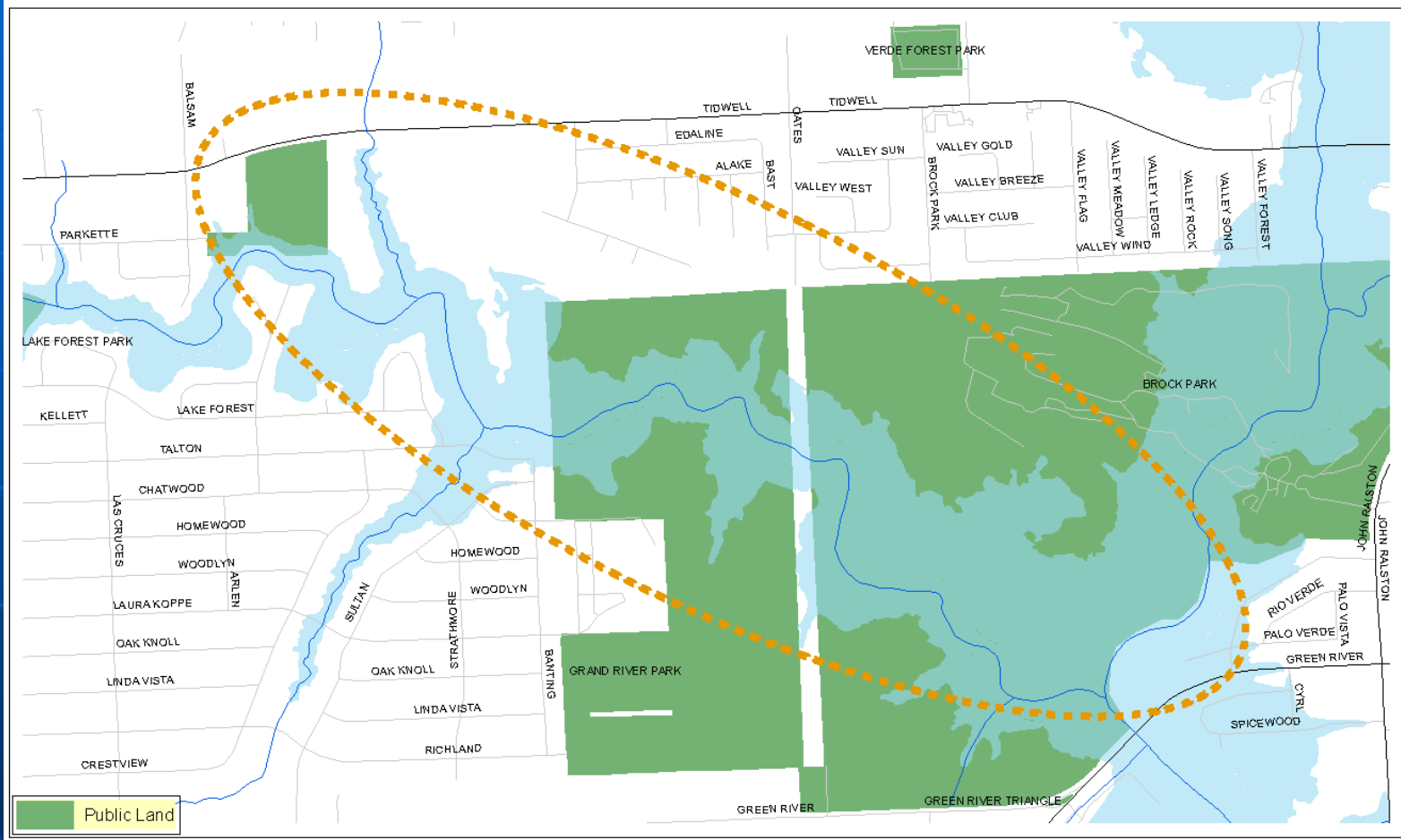
Hunting Bayou



- Up to 1,000 acre-feet
- Utilizes existing City Park (Hermann Brown)



Greens Bayou



- Up to 1,500 acre-feet



Water Quality of Local Bayous



- Total Maximum Daily Load (TMDL)
 - 3 Adopted and remainder of City under development
- Bacteria Implementation Group
 - 3 Representatives
- Best Management Practices
 - Cosmetic Wash Water
 - Cottage Grove demonstration



Water Quality of Lake Houston



- Current Conditions
 - Shallow/13,000 acres
 - Fed by San Jacinto River and multiple Bayou's/Streams from East and West
 - Built for water supply use but support joint recreation use
 - Preparing a long term implementation plan, as required by EPA, to be fully in compliance with Federal Standards.



Potable Water



- Potable Water Produced by Northeast Plant uses Lake Houston as a source
 - 80 MGD capacity – growing in the future
 - Multiple regional supply of potable water
 - Undertaking \$250m project to bring 400m gallons per day of Trinity River water to Lake Houston by 2020
 - Lake Houston provides approximately 20% of the City's raw drinking water – within the next 10 years expected to increase to 40%
 - Treatment costs of Lake Houston Water are 30-40% higher than other plants



Water Quality Impacts



- Multiple Issues Impact Lake Houston Water Quality
 - Siltation from natural bank erosion of feeder Bayou's
 - Impact of sand mining
 - Impact of MUD plant discharges and other plant discharges
 - Impact of natural environment (birds, wildlife, farming, etc.)
 - Impact of fertilizer
 - Impact of upstream oil & gas development
 - Impact of recreational use
 - Impact from septic tanks



Model of Lake Houston



- Embarking on a broad based modeling effort with Rice and UH to “model” the Lake
 - Want to assess dynamics of Lake
 - What is impact of siltation, dilution of Trinity River and all upstream discharges?
 - What is stratification of Lake and impact on water production



Potential Steps for Water Quality Improvements



- Prototyping some projects to use wetlands and natural vegetation to “drop-out” sediment
 - Possible application to abandoned sand mines/mitigation measures at existing mines
 - Enforcement of construction permits in unincorporated areas concentrating on erosion control
 - Seeking State and Federal grants to fund these programs.



Questions

