

UNIVERSITY OF **HOUSTON**
PLANT OPERATIONS – FACILITIES MANAGEMENT

Infrastructure and FCI Plan

March 11, 2011





Overall Infrastructure Need

- Campus infrastructure has surpassed its renewal age
 - Area's of disrepair exist across campus
- Historically issues have been addressed as emergencies occur or as new projects were planned
 - A strong infrastructure plan will allow the university to plan proactively and replace critical systems prior to failure
 - Data from the plan will help guide site and design decisions
- Plan is essential to university's to support Research mission and ensure future business continuity
 - Investment will need to be thoughtful and staged with other master planning efforts



FM Infrastructure and FCI Projects Overview

1. Chilled Water, Condensate and Steam CIP
2. Electrical CIP
3. Landscape , Sidewalk, & Irrigation CIP
4. Water, Sanitary, Storm, Natural Gas, Fiber Optic Survey
5. Water, Sanitary, Storm CIP
6. Transportation CIP
7. Infrastructure CIP Integration
8. Facilities Conditions Assessment Plan



1. Chilled Water, Condensate and Steam CIP

2. Electrical CIP

- Investigated ability of central plant and power supply to support existing and future development
- Both are fully funded and substantially complete
- Managed by Sameer Kapileshwari



1. Chilled Water, Condensate and Steam CIP

- Status: Draft report for chilled water was presented and reviewed in January.
- Findings:
 - Immediate: Currently critical (Immediate) – \$107K To conduct non destructive testing to determine corrosion for 50(+) year old chilled water piping in tunnels M (Technology to SERC), C, and N (Technology to Quads and E. Cullen to McElhinney).
 - Year 1: Potentially critical (1 year) - \$1.5M to replace and upsize chilled water lines in tunnel M from 20” to 24” and in tunnels C and N from 16” to 20”.



2. Electrical CIP

- Status: Draft report for electrical was presented and reviewed in January.
- Findings:
 - Immediate: \$300K for detailed assessment of equipment and feeder (Meg/Hi-Pot tests, oil tests for Xfmrs, reliability tests)
 - Year 1: \$4M for Phase 1 Equipment and Feeder repair/replacement (some primary and secondary feeders plus some electrical equipment). This price is approximate and will be further refined after detailed equipment assessment and testing.
 - Year 2 to 5: \$7M for adding capacity from Substation to building for core campus (some primary and secondary feeders)
 - Year 6-10: \$7M Equipment upgrade Phase 2 (equipment replacement and upgrades). This price is approximate and will be further refined after detailed equipment assessment and testing.



3. Landscape, Sidewalk & Irrigation CIP

- Landscaping throughout campus does not follow an overall plan. Many sidewalks in disrepair, presenting safety hazards and ADA liability. Irrigation system at end of life-span with out-of-date mainlines and components
- Internal campus circulation routes and sidewalk widths to be studied as part of Landscape MP
- Landscaping and irrigation can be updated to reduce maintenance demand and water consumption
- Managed by Roger Warner



4. Water, Sanitary, Storm, Natural Gas, Fiber Optic Survey

- Fully funded
- Work is 80% complete
- First major effort by UH to document these utilities
- Managed by Keith Ivy



5. *Water, Sanitary, Storm CIP*

- Many areas of the systems are aging
- Will perform analysis of demand vs. capacity and indicate where improvements are needed for current and future development
- Will investigate options for addressing storm water detention requirements for campus
- UH has not previously performed a campus-wide study for these systems
- Study results may provide support for City improvements to City utilities
- Managed by Keith Ivy



6. *Transportation CIP*

- Campus is surrounded by aging City roadways. Results of plan can be used when discussing need for improvements to with City
- Plan will investigate if there are needs for new UH roads, adjustment of existing roads, or ability to remove existing roads
- Will coordinate with Landscape, Sidewalk, & Irrigation CIP to improve pedestrian safety across roadways
- Managed by Keith Ivy



7. Infrastructure CIP Integration

- Effort to “mesh” all known planning initiatives into one comprehensive plan
- Allows University to better understand infrastructure funding needs and timing for next 10-20+ years
- Allows plans to be compared against non-infrastructure campus needs



8. *Facilities Conditions Assessment Plan*

- Work to begin by end of March
- Assess exterior, roof systems, and mechanical aspects of buildings
- Assess dining facilities and associated kitchen equipment. Assess IT and security.
- Phase 1: SR1, SR2, Engineering 1, Engineering 2, Health Science Center, Settegast Hall, Bates Hall, Taub Hall, Oberholtzer Hall, Moody Towers
- Phase 2: All other buildings on UH Main Campus
- Managed by Jim Norcom



Project Schedules

1. Chilled Water, Condensate and Steam CIP
Draft Complete
2. Electrical CIP
Draft Complete
3. Landscape , Sidewalk, & Irrigation CIP
Begin March 2011, Complete July 2011
4. Water, Sanitary, Storm, Natural Gas, Fiber Optic Survey
Began October 2010, Complete April 2011
5. Water, Sanitary, Storm CIP
Begin May 2011, Complete August 2011
6. Transportation CIP
Begin May 2011, Complete September 2011
7. Infrastructure CIP Integration
Begin August 2011, Complete February 2012
8. Facilities Conditions Assessment Plan
Begin March 2011, Complete Early 2012