Update on Lake Worth Water/Sewer Projects and Watershed Protection Study

Lake Worth Regional Coordination Committee
June 9, 2016

Presented by:

Water Department

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Recent Utility Work

Love Circle Water/Sewer Project

- 54 water/sewer services
- 8,000 LF water pipe
- 7,000 LF low pressure sewer
- 2,000 LF sewer FM
- Advertise in July, Bid in August

Watershed Protection Study

- Lake Worth Watershed Protection Plan Feasibility Study Authorized by Fort Worth City Council on February 3, 2015
- Cost of the study is $323,500
  - Builds on the Greenprinting study and lessons learned from the Lake Worth dredging project
  - Goal to reduce sediment and nutrient loading to Lake Worth
  - Focus on removing sediments from Silver Creek and Live Oak Creek through the use of off-channel sedimentation basins
  - Determine the feasibility of utilizing constructed wetlands
  - Develop best management practices
  - Recommend a water quality monitoring plan

Study Status

- Task 1 – Baseline Modeling - Complete
  - SWAT (Soil& Water Assessment Tool) Model developed
- Task 2 – BMP Evaluation – In Progress
  - Load SWAT Model Results into BATHTUB Model
  - BMPs Selected: Filter Strips, Grassed Waterways, Terraces
- Task 3 – Develop Monitoring Plan – In Progress
- Scheduled Completion – Fall 2016

Sedimentation facilities feasibility - Silver Creek & Live Oak Creek

- Met with quarry owners
  - Site visit
  - Sampling
- Flow with most sediment
- Storage Volumes
- Detention times
- Conceptual design
  - Most sediment at high flows
  - Very large pumps
  - Very large diversion structure
  - High capital cost
  - Pumps run very seldom
  - Maintenance issues

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Sedimentation facilities feasibility - Silver Creek & Live Oak Creek

- Alternate solution
- Streamside Technology Sediment Collector system
  - Infrastructure across streambed
  - Captures sediment by gravity into structure
  - Sediment pumped off-channel site; dewatered
  - Sediment reclaimed as clean sand; water returned to stream
- COE has used this technology
- Developing estimates of sediment removal
- Developing cost estimates, $/tons removed

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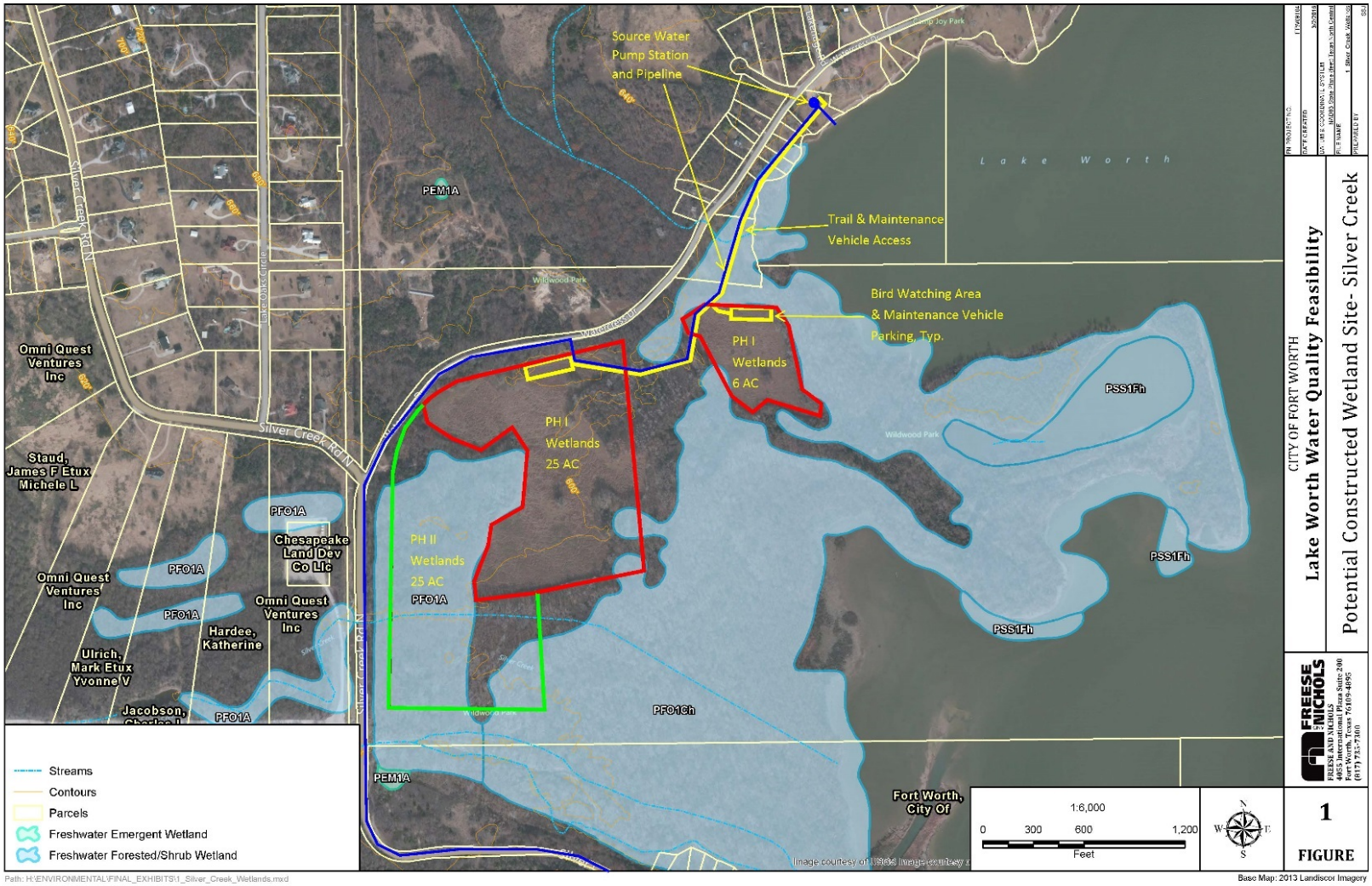
Constructed wetlands feasibility

- 2 phases - Phase I in Red, Phase II in Green (partial, see next slide)



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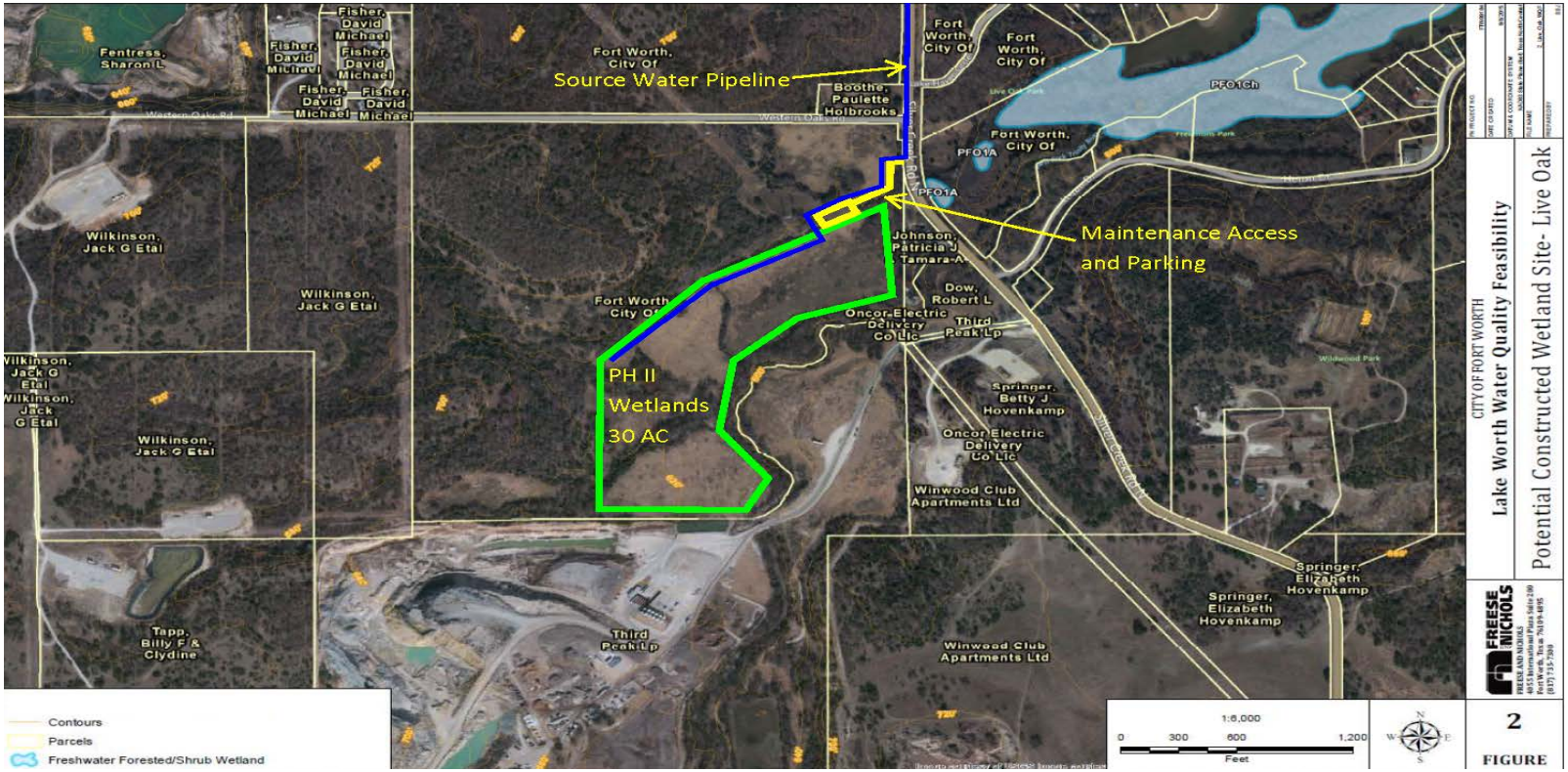
Constructed wetlands feasibility

- Completed:
  - Conceptual design
  - Estimates of nutrient removal
  - Cost estimates, capital & O&M
- To Complete:
  - Present value cost analysis
  - Meeting with COE
  - Tech Memo



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Summary

- Both Love Circle and Watershed Protection Plan have a common goal of minimizing pollutants to Lake Worth
  - Lake Worth is a water supply source for Fort Worth/wholesale customers and River Oaks
- Both projects consider managing growth in an environmentally responsible manner
- Both projects treat Lake Worth as a valuable resource and asset that is to be valued and protected

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QUESTIONS