

LAKE WORTH CAPITAL IMPROVEMENTS IMPLEMENTATION PLAN

December 18, 2007



PURPOSE

- To provide the City Council with a report on the Lake Worth Capital Improvements Implementation Plan (LWCIP) and recommendations for funding



OUTLINE

- **Background**
- **Lake Worth Capital Improvements Implementation Plan**
- **Revenue Projections**
- **List of Projects and Cost Estimates**
- **Recommended Policy Changes**
- **Next Steps**
- **Questions**

BACKGROUND

- The staff recognized the need to develop a comprehensive multi-departmental capital improvements program (CIP) for the revitalization of Lake Worth
- Funding for the Lake Worth CIP would come from revenues generated by gas leases involving city owned properties under and around Lake Worth
- City Council awarded the design contract to Freese and Nichols on April 3, 2007

SCOPE OF STUDY

- The purpose of the study was to develop a comprehensive list of capital improvements in and around Lake Worth
- The plan includes dredging, watershed management, drainage improvements, water and sewer improvements, recreational facilities, stump and navigation obstacle removal, and access control to vacant land
- Public involvement included four meetings with the Steering Committee and three public hearings

PROJECT EVALUATION AND RANKING CRITERIA

- **WATER QUALITY ENHANCEMENT**
- **HEALTH/SAFETY ENHANCEMENT**
- **VALUE TO CITY AND REGION AS A WHOLE**
- **IMPACT ON GROWTH/DEVELOPMENT**
- **PUBLIC ACCESS AND RECREATIONAL IMPROVEMENTS**
- **SUSTAINABILITY OF IMPROVEMENTS**

PILOT DREDGING PROJECT

- Goal was to evaluate various dredging methods, increase staff knowledge about dredging project management and enhance boating safety in target areas
- Project involved dredging of 40,000 cubic yards in three areas
- Lack of accurate data about depths and bottom conditions
- Developed dredging strategies and measuring methods for payment purposes



COST/BENEFIT ANALYSIS

- Goal is to improve water quality and restore recreational opportunities at Lake Worth
- Found decline in cost/benefit ratio after four feet lake depth for water quality and six feet for recreational activities
- Dredging those areas less than six feet deep to six feet in depth would be the optimal solution
- Six foot depth based on lake elevation of 590 ft. Lowest level allowed under TRWD contract
- Proposed dredging depth is 584 ft./ 3,000,000 cubic yards

LAKE WORTH COMPREHENSIVE CAPITAL IMPROVEMENT IMPLEMENTATION PROJECT



POTENTIAL DREDGING AREAS

Legend

- Elevation 584 Contour
- City Property (Tarrant Appraisal District)
- Possible Disposal Areas
- Proposed Dredge Areas**
 - Extended Depth
 - Regular Depth

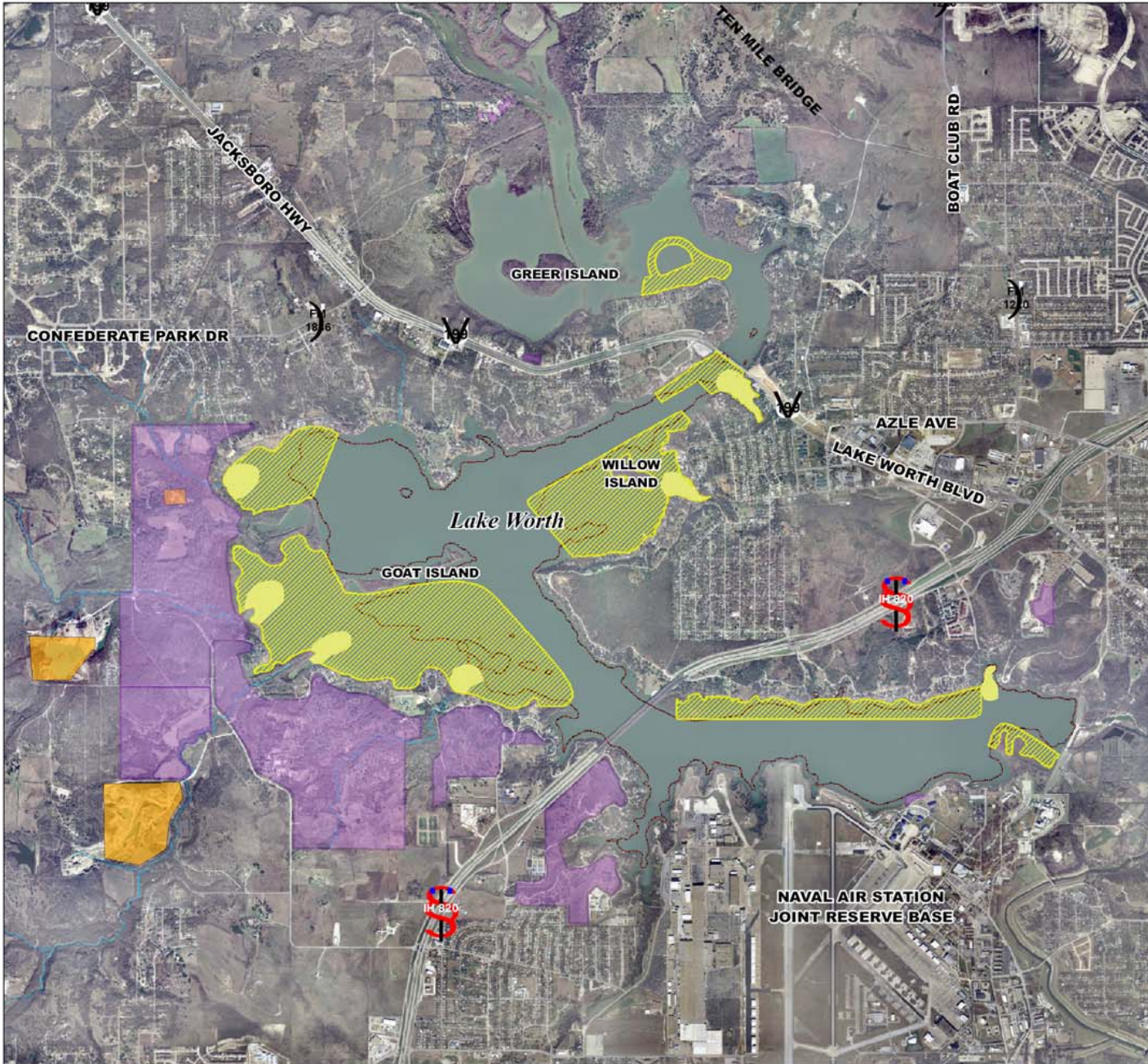
MAP PREPARED: AUGUST 22, 2007



VICINITY MAP
NOT TO SCALE



AUGUST 11, 2007 17:02:24 11-01-05_DwgDesigning Map DREDGING MAP 01_julian.MXD



DURATION OF DREDGING PROJECT

- Three years - \$7.50 a cu.yd. X 3,000,000 cu.yds. = \$30,999,023
- Ten years - \$13.00 a cu.yd. X 3,000,000 cu.yds. = \$58,160,687
- Potential savings Three Years vs. Ten Years
\$27,161,664

LAKE WORTH COMPREHENSIVE CAPITAL IMPROVEMENT IMPLEMENTATION PROJECT

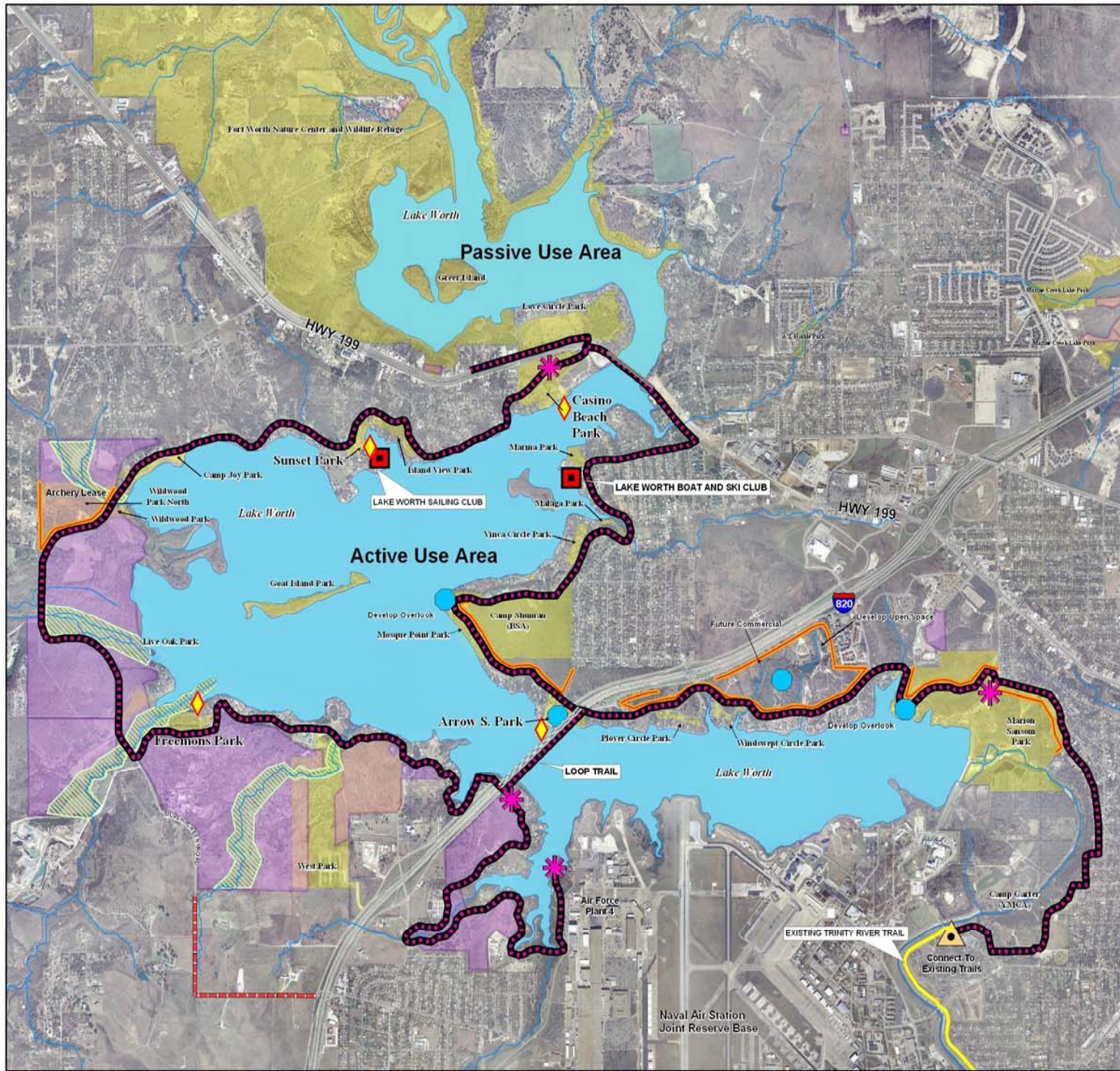
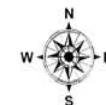


PARK AND ACCESS MANAGEMENT PLAN

Legend

- Boat Ramp Improvements
- Connection to Existing Trails
- Existing Marina
- Park Development
- Trail Head
- Primary Bike & Jogging Trail
- Lake Worth
- Access Control
- Erosion Control - Green belt
- Silver Creek Road Improvements
- City Owned Property
- Parks

MAP PREPARED: DEC 15, 2007



LAKE WORTH COMPREHENSIVE CAPITAL IMPROVEMENT IMPLEMENTATION PROJECT



PROPOSED WATER PROJECTS

LEGEND

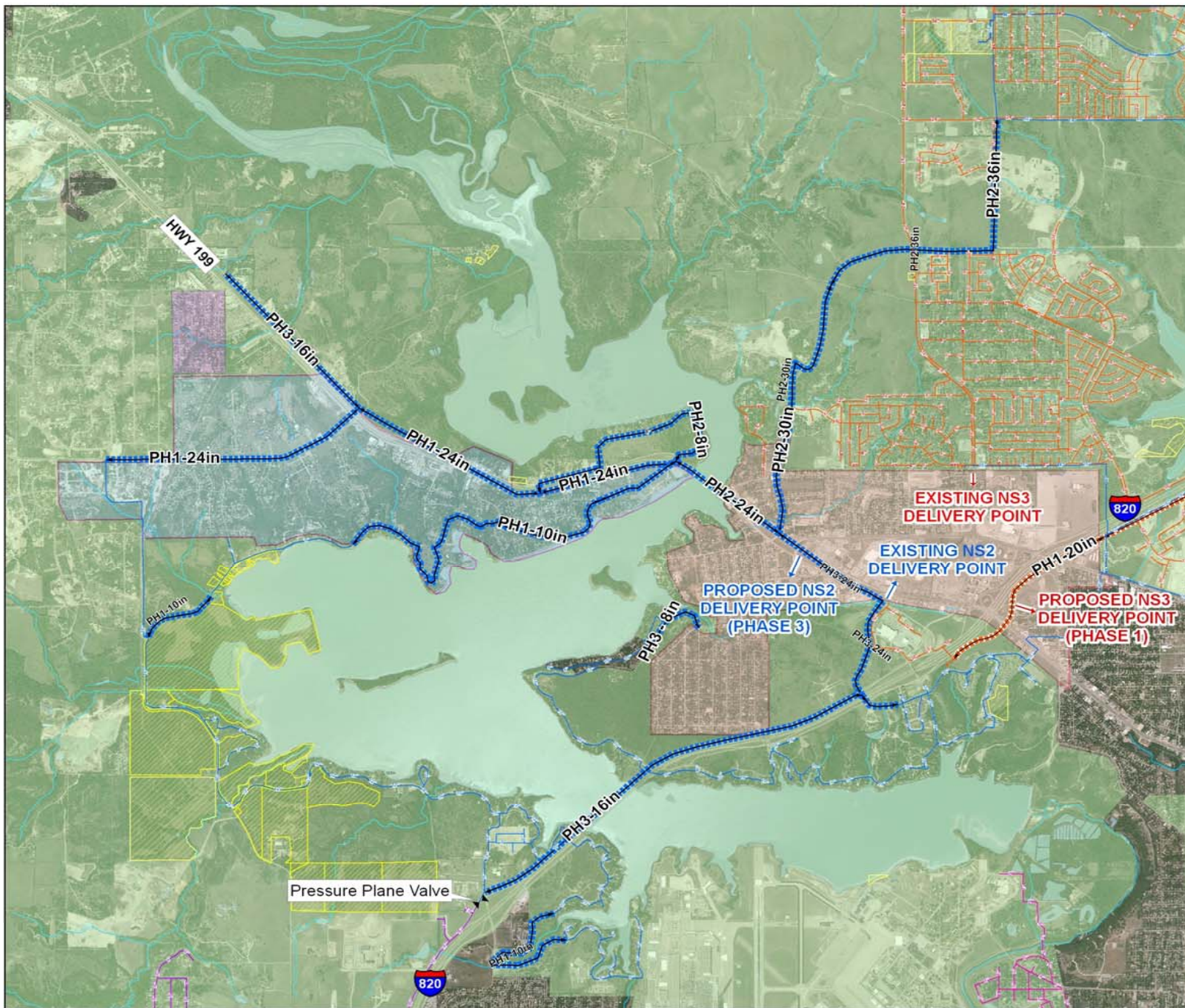
- WS3 Pressure Plane
- NS3 Pressure Plane
- NS2 Pressure Plane
- Holly Pressure Plane
- Future Water Lines**
- NS2 Pressure Plane
- NS3 Pressure Plane
- City Owned Property & Park
- CCNs**
- City of Azle
- City of Fort Worth
- City of Lake Worth
- Town of Lakeside

MAP PREPARED: DEC 15, 2007



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SCALE IN FEET

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LAKE WORTH COMPREHENSIVE CAPITAL IMPROVEMENT IMPLEMENTATION PROJECT



PROPOSED SANITARY SEWER PROJECTS



LEGEND

- Existing Gravity Main
- Existing Force Main
- Existing Low Pressure System
- PROPOSED LOVE CIRCLE LIFT STATION
- PROPOSED SANITARY SEWER MAINS**
- 1 - LOVE CIRCLE FM AND LIFT STATION
- 2 - WATERCRESS / LOVE CIRCLE LP SYSTEM
- 3 - WOODVALE LOW PRESSURE SYSTEM

MAP PREPARED: AUGUST 22, 2007

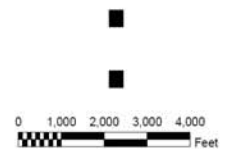


PHOTO COURTESY OF FORT WORTH
AUGUST 22, 2007

LAKE WORTH LAND FUNDED PROJECTS

LAKE WORTH WATER FUNDED PROJECTS

ASSUMPTIONS USED IN ESTIMATING GAS REVENUES

- All Lake Worth gas leases will be awarded by 2010
- Production will begin two years after leasing
- 225,000 MCF per acre of natural gas
- Recovery rate of 20%
- Depletion rate of 50% per year
- Market rate for natural gas of \$5.00 per MCF
- Lease Bonus of \$9,000 per acre
- Royalty of 25%

LAKE WORTH COMPREHENSIVE CAPITAL IMPROVEMENT IMPLEMENTATION PROJECT



Lake Worth Gas Production Z

MAP PREPARED: DECEMBER 6, 2007

Legend

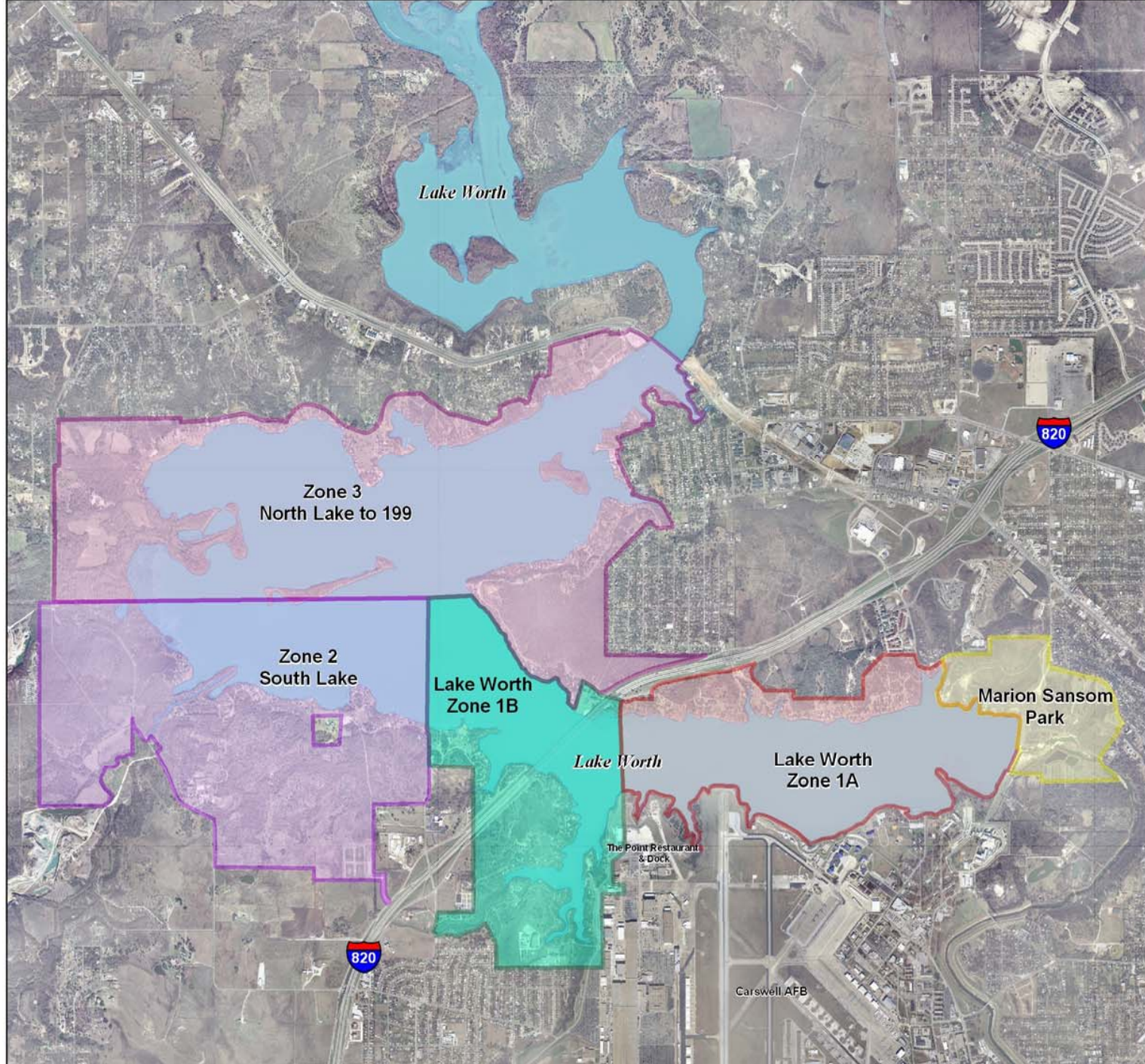
- Marion Sansom Park
- Lake Worth Zone 1A
- Lake Worth Zone 1B
- Zone 2 - South Lake
- Zone 3 - North Lake to 199
- Lake Worth

Land Acreage:

Marion Sansom Park -	207.55
Lake Worth Zone 1A -	136.00
Lake Worth Zone 1B -	433.27
Zone 2 - South Lake -	1013.58
Zone 3 - North Lake to 199 -	885.09



0 2,000 4,000



EXISTING GAS REVENUE POLICY

- Lake Worth Land – Revenues from areas under land go into the Lake Worth Gas Lease Revenue Fund
- Lake Worth Water – Revenues from areas under the waters go into the Water Department Fund

PROJECTED GAS REVENUES (LAKE WORTH LAND AND WATER)

- Lake Worth Land
 - Lease Bonus - \$24,253,000
 - Royalties - \$150,494,000
 - Total - \$174,747,000
- Lake Worth Water
 - Lease Bonus - \$25,202,000
 - Royalties - \$152,113,000
 - Total - \$177,315,000
- Grand Total - **\$352,215,000**

STAFF RECOMMENDATION REVENUE POLICY

Current Policy

*Bonus amount Lake Worth Zone 1A
\$7.2 million [royalties pending
production]**

100%: Lake Worth Gas Well
Revenue Fund
\$7.2 million

Proposed Policy

*Bonus amount Lake Worth Zone 1A
\$7.2 million [royalties pending
production]**

50%: Water & Sewer CIP
\$3.6 million

25%: Fort Worth Permanent Fund
\$1.8 million

25%: Utility Street Reconstruction
CIP
\$1.8 million

*Funds available pending compliance with Master Ordinance and City Council declared surplus on annual basis.

STAFF RECOMMENDATION REVENUE ALLOCATIONS

• Lake Worth Land Fund	\$87,373,500
• Lake Worth Water Fund	\$88,657,500
• Total Water/Sewer CIP	\$176,107,500
• Ft. Worth Permanent Fund	\$88,053,750
• Utility Street Reconstruction	\$88,053,750
• Total	\$176,107,500

PROPOSED LAKE WORTH CAPITAL IMPROVEMENT PROGRAM FUNDING

- Lake Worth Land Funded Projects - \$72,634,000
- Lake Worth Water Funded Projects - \$44,441,000
- Total Lake Worth Capital Improvement Program (LWCIP) - **\$117,075,000**

RECOMMENDED CHANGES TO CURRENT POLICIES

- Combine the Lake Worth Water and Lake Worth Land Funds into the Water/Sewer CIP Fund
- Allocate \$117,075,000 from the Water/Sewer CIP Fund to the Lake Worth Infrastructure Fund to finance the improvements in the LWCIP

LAKE WORTH GAS REVENUE POLICY RECOMMENDED CHANGES

Current Policy

Lease Bonus and Royalty
Revenues

100% of Revenues from under Lake
Worth lands:

Lake Worth Land Fund
\$175 million

100% of Revenues from under Lake
Worth waters:

Lake Worth Water Fund
\$177 million

Proposed Policy

Lease Bonus and Royalty
Revenues

50%: Water & Sewer CIP
\$176 million

(\$117 million to LWCIP)

25%: Fort Worth Permanent
Fund

\$88 million

25%: Utility Street Reconstruction
CIP

\$88 million

NEXT STEPS

- Amend the City Council's Policy on Gas Lease Revenues to reflect the Recommended Changes proposed by staff
- Commit \$117,075,000 from Lake Worth Gas Lease Bonuses and Royalties to the Lake Worth Infrastructure Fund to fund the LWCIP
- Authorize the release of existing Lake Worth Lease Bonus funds to begin the LWCIP

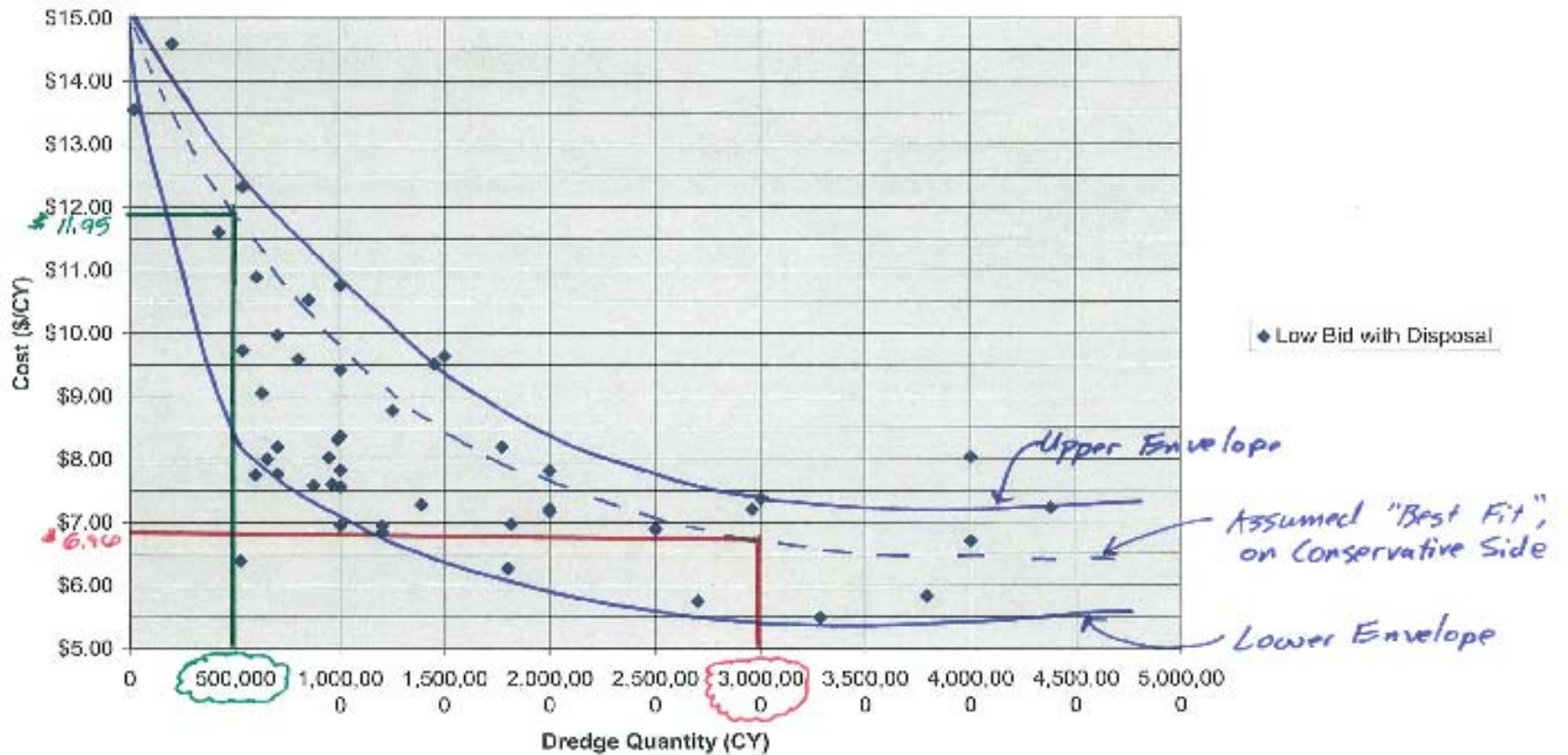
QUESTIONS?

REVIEW OF EXISTING DREDGING STUDIES

Lake Worth Dredging Quantities
Based on 1990 Feasibility Study

<u>Area</u>	<u>Acre Feet</u>	<u>Cubic Yards</u>	<u>Years</u>	<u>Dredges</u>	<u>Cost</u>
Total Lake	7,950	12,825,735	4	16	\$127M
Below HWY 199	6,970	11,244,701	4	14	\$111M
Water < 10 ft.	3,100	5,001,230	3.6	7	\$50M
Water < 6 ft.	1,000	1,613,300	2	4	\$16M

U.S. Army Corps of Engineers
Dredging Contracts
FY 2006 & 2007 WITH DISPOSAL @ \$4.50/CY



PROPOSED CHANGES

OPTION 1

- Combine the Lake Worth Water and Lake Worth Land Funds into the Water/Sewer CIP Fund
- Allocate \$115,075,000 from the Water/Sewer CIP Fund to finance the improvements in the LWCIP
- Dedicate all of the Lake Worth Lease Bonus Revenues to LWCIP
- Estimated Bonus Revenues \$49,455,000

PROPOSED CHANGES OPTION 1(Cont.)

- Royalties to cover remaining balance
- Estimated Royalties required for LWCIP
\$65,620,000
- Royalties will be allocated 42% to
Water/ Sewer CIP, 29% to Permanent
Fund and 29% to Street Reconstruction
CIP

LAKE WORTH GAS REVENUE POLICY OPTIONS

Proposed Policy

Lease Bonus and Royalty
Revenues

50%: Water & Sewer CIP
\$176 million

25%: Fort Worth Permanent
Fund
\$88 million

25%: Utility Street
Reconstruction CIP
\$88 million

OPTION 1

100%: Lease Bonus to Water &
Sewer CIP - \$49 million

42% Royalties: Water and Sewer
CIP - \$127 million

29% Royalties: Fort Worth
Permanent Fund - \$88 million

29% Royalties: Street
Reconstruction Fund - \$88
million

NEXT STEPS

- Amend the City Council's Policy on Gas Lease Revenues to reflect the changes in Option 1
- Commit \$115,075,000 from Lake Worth Gas Lease Bonuses and Royalties to fund the LWCIP
- Authorize the release of existing Lake Worth Lease Bonus funds to begin the LWCIP