

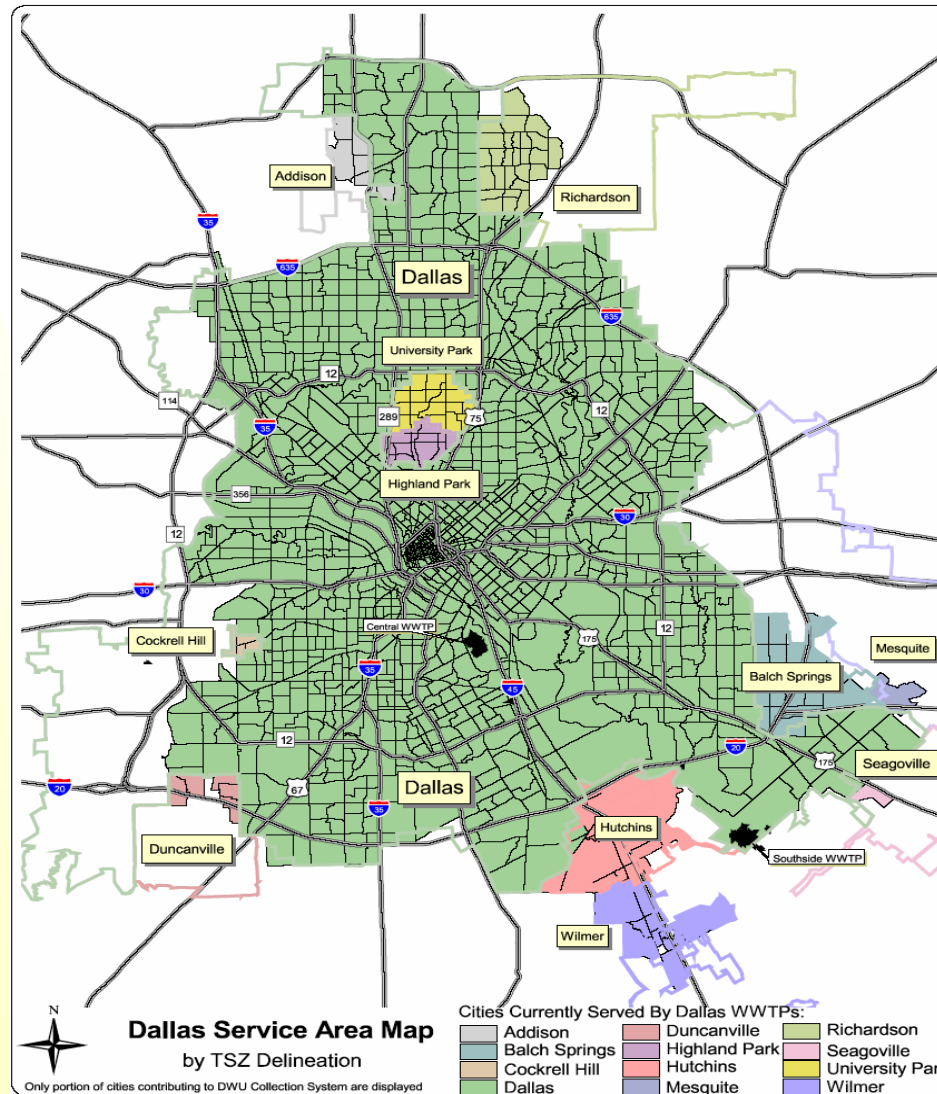
# City of Dallas Wastewater Collection System: TCEQ Sanitary Sewer Outreach Agreement

Quality of Life Committee  
December 11, 2006

# Briefing Purpose

- Provide update on Wastewater Collection Activities
- Provide Information Regarding Regulatory Issues Associated with TCEQ's Sanitary Sewer Outreach Agreement

# Dallas Service Area Map



# Background Wastewater Collection System

- Key activities essential for effective sanitary sewer system maintenance:
  - Condition Assessment
    - Internal pipe inspection (television investigation)
    - Manhole inspection
    - Flow monitoring
    - Detect and repair sources of inflow and infiltration
  - Regular maintenance of sewer lines through method such as:
    - Mechanical and high velocity pressure cleaning
    - Root Control
    - Point Repairs
    - Rehabilitation and Replacement

# Background Wastewater Collection System

- The Wastewater Collection Division operates and maintains the sanitary sewer system in order to collect and transport domestic and industrial wastes to the City's two wastewater treatment plants.
- Sanitary System Facts:
  - 350 Square Mile Service Area
  - 4100 miles of mains
    - Sewer mains sizes vary from 3" to 120"
      - 80% under 12"
    - Estimated sewer system age
      - 0 to 25 years : 16.0 %
      - 26 to 50 years : 37.0 %
      - Over 50 years : 47.0 %
  - 14 Lift Stations
  - 35,661 Manholes
  - 51 Wastewater Flow Monitoring Stations
- System operating under basic recommendation of the 1997 Master Plan (10 year update underway)

# How do We Fair Against the 1997 Master Plan Recommendation

Master Plan Recommendations- 1997	FY 05-06 10/05 – 09/06
Increase cleaning of collector mains from 900 to 1300 miles each year	1354
Increase the miles of mains rehabilitated or replaced from 20 miles to 30 miles per year	40
Establish an I/I Analysis program to complete the entire City in 21 years ( Wastewater Collection System covers 37 sewer shed)	Thirteen (13) I/I study covering sixteen (16) sewer sheds have been conducted from 1991 to 2005 (seven studies done after 1997)
Begin a stream and sewer overflow monitoring program	Over 50 Monitoring stations throughout the system
Develop a program to require improvement of private sewers	N/A

# Background **What Are We Doing Now**

- Operation and Maintenance (FY 05-06: \$14.5 millions; FY 06-07 : \$15.9 Millions)

## FY 05-06 Activities

- Condition assessments
    - Cleaned 34% of total system
    - Inspected over 5% of total system manholes
  - Maintenance
    - Performed 6,413 sewer main repair
    - Installed over 1,709 laterals
    - Treated over 70 miles of mains for roots
    - Responded to over 9,900 stop sewer calls
  - Expanded our grease outreach program to residential customers to minimize and reduce the introduction of grease into the sanitary sewer system
- 
- Infrastructure Replacement (FY 05-06: \$ 23.0 Millions; FY 06-07: \$ 35.0 Millions)
    - Rehabed and replaced approximately 40 miles of sanitary sewer mains.
  - Awarded an engineering contract to Montgomery Watson in 2003 to conduct a comprehensive wastewater collection system assessment master plan that serves the city of Dallas to the year 2025.
    - Wastewater Collection System Assessment Master Plan underway (Completion estimated 06/07)

# Background Current Regulatory Issues

- **January 13, 2005** TCEQ conducted a scheduled Environmental Quality Investigation on DWU's Wastewater Collection System.
- **February 23, 2005** DWU received a post investigation report with the following:
  - Recognition from TCEQ regarding Dallas' efforts to improve the overall performance of the wastewater collection and treatment system
  - Notice of Violation for the discharge of sewage from the collection system.
- **August 19, 2005** DWU received letter from TCEQ extending an invitation to Dallas to participate in a new SSO initiative program that would address sanitary sewer overflows



# What is SSO Outreach Initiative?

- SSO Outreach Initiative is a new state program created because of increase in SSOs due to aging systems
- Intended to reduce the number of SSOs that are reported each year in Texas
- Intended to encourage municipalities to develop and implement corrective action plans before:
  - SSOs impact human health or the environment.
  - SSOs become an enforcement issue.

# Why Dallas Should Join The SSO Initiative ?

- The Initiative creates cooperative relationship with TCEQ
- Initiative agreement terms and duration are developed by Dallas
- DWU has previous Notice of violation which increases risk of future enforcement and penalties
- Dallas like many other municipalities have been experiencing increased SSO episodes in recent years (according to TCEQ, thirty (30) Texas Cities have sent letters of interest to join the SSO initiative)
- EPA regulators have stated that they will not pursue an enforcement action against POTW's participating in a state sponsored SSO program
- The initiative will provide Dallas the time needed to evaluate the effectiveness of the ongoing grease abatement program
- DWU is currently conducting a Comprehensive Wastewater Collection System Assessment:
  - The Initiative will provide Dallas the time needed to implement the wastewater collection system assessment recommendations

# What are the Key Terms of the Initiative?

- Participation is entirely voluntary
- Must enter into a formal Agreement with TCEQ to address SSO problems
  - The Agreement would not protect the City from formal enforcement for SSOs if the City fails to maintain compliance with the provisions of the negotiated Agreement.
- No penalties associated with the Formal Agreement
- Will not affect TCEQ Compliance History

# What are the key Components of the Formal Agreement ?

- Formal Agreement must include:
  - Capacity Plan
    - The capacity plan focuses on developing, recommending, and implementing infrastructure renewal plan to eliminate capacity-related SSOs
  - Maintenance Plan
    - The maintenance plan will focus on SSOs most frequently caused by blockages.
  - Management Plan
    - The plan is centered around management strategies to reduce Sanitary Sewer Overflows.

# What are the Regulatory Issues

- Section 301 of the Clean Water Act prohibits the discharge of any pollutant to waters of the United States from a point source, unless the discharge is authorized by a permit. One of the Environmental Protection Agency (EPA) and Texas Commission on Environmental Quality (TCEQ) ongoing enforcement priorities the past two years has been to identify and correct raw sewage discharges (Sanitary Sewer overflows, SSOs) to protect public health and the environment.

# What is Sanitary Sewer Overflow?

- A Sanitary Sewer Overflow (SSO) is the discharge of sewage regardless of quantity from the wastewater collection system (manholes, cleanout, pipes) before reaching the treatment plant.
- General Causes
  - Growth/Capacity
  - Structural defects (pipe age, design, material)
  - Blockages (grease, tree roots, debris)
  - Extended drought/extreme wet weather conditions leading to settled, cracked and leaky or collapsed pipes
  - Corrosion

# Goals and Priorities

- Primary goal to achieve an average 2% per year reduction in Sanitary Sewer Overflows over the next ten years beginning in FY 07-08
- Complete the ongoing Comprehensive Wastewater Collection System Assessment to determine future O&M and replacement needs
- Continue the main replacement/rehabilitation program & update the geographic information system (GIS) to reflect the changes
- Place more emphasis on proactive system maintenance utilizing an aggressive preventive maintenance cycle targeting historically problematic areas.
- Revise Food establishment Ordinance in FY 07 to specify frequency for pumping grease traps
- Establish a measurement system to assess progress

# Schedule

- January 17, 2007, Full Council Briefing
- January 24, 2007, Permission to Join the initiative through council resolution
- January 25, 2007, Submit the City of Dallas Sanitary Sewer Action Plan to TCEQ



# Recommendation and Next Steps

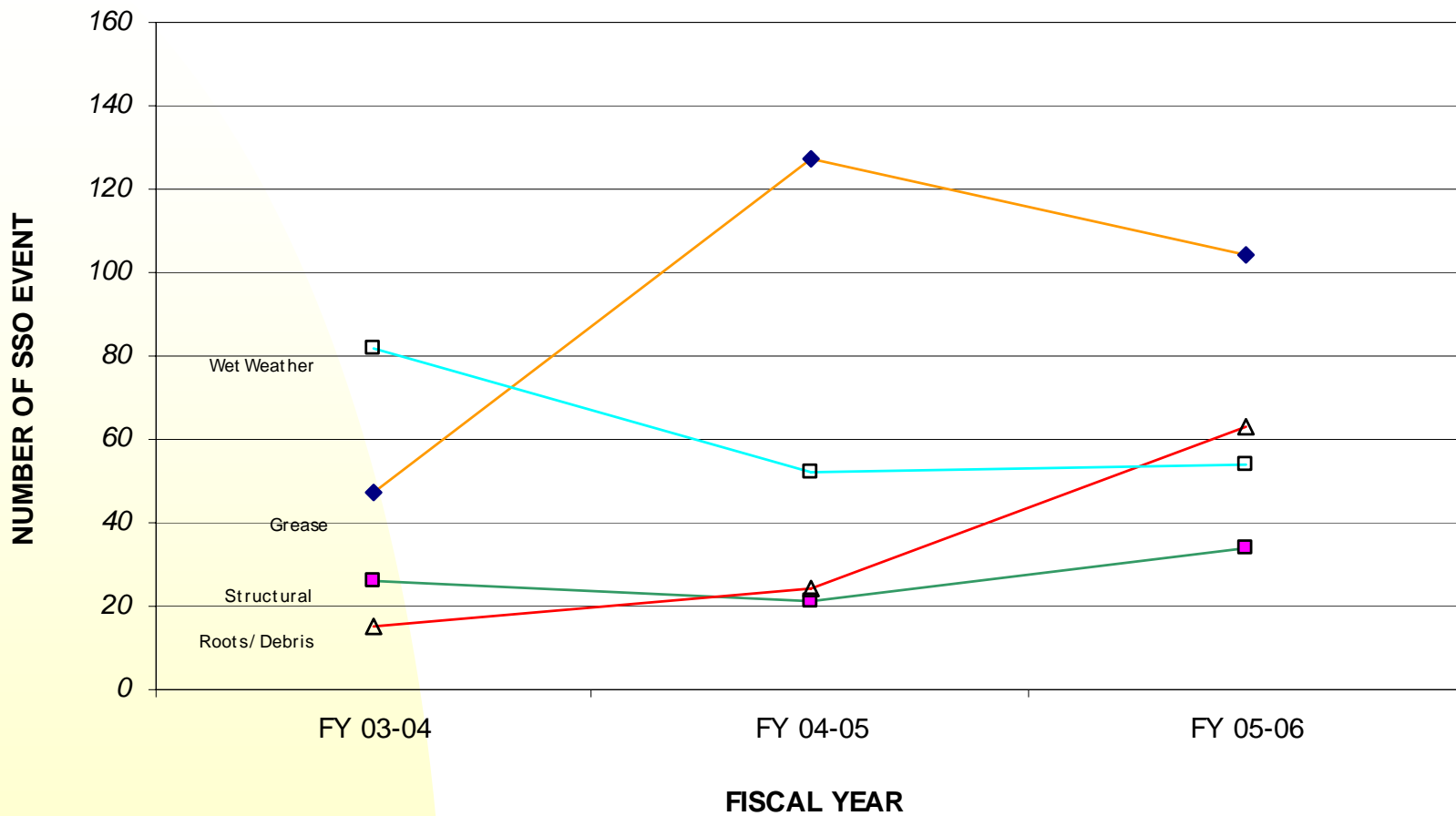
- Seek Committee feedback on the SSO Initiative Agreement
- Seek Committee support
- Revise Food establishment Ordinance to specify frequency for pumping grease traps
- Progress will be monitored and reported
- City Council will be briefed on future updates/plans

# Questions ?

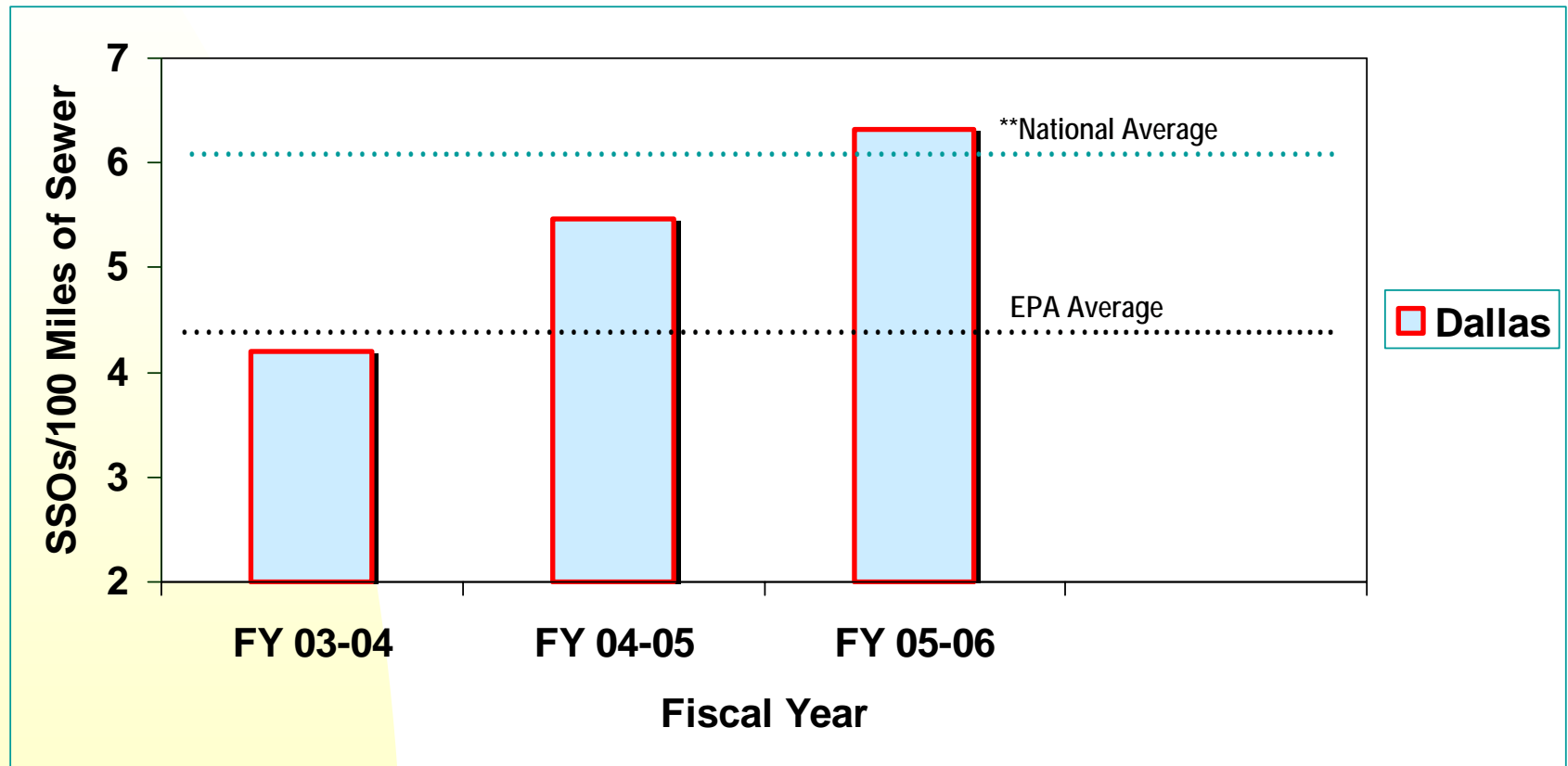
# Appendix

# SANITARY SEWER DATA

(October 1, 2003 thru September 30, 2006)



# How Dallas Compares to National Benchmark Data



\*\* MWH Wastewater Collection Master Plan Update

# What Do the Charts Tell Us ?

## In General:

- Based on the previous charts, Dallas is little above the national average for sewer overflows per 100 miles of sewer and shows overall upward trend

## Specifically:

- Structural and wet weather related overflows have decreased (***replacement & rehabilitation***) while blockages related overflows have increased (***grease & tree roots***).

# Previous EPA Administrative Order (A.O.) for Sanitary Sewer Overflows

- EPA issued An Administrative Order (A.O.) to DWU for Sanitary Sewer Overflows on January 1990
- The A.O. focused on the elimination of several sanitary sewer overflows associated with storm water runoff and groundwater that enters the sanitary sewer system during a storm through cracks in sewers (Infiltration & Inflow-I/I).
- DWU Commissioned CH2M HILL in 1991 to update the Wastewater System Master Plan and recommend remedial measures to improve the efficiency of the wastewater collection and treatment system.
- The plan involved a series of collection system capacity evaluations, new construction, major pipeline replacement projects, and other associated work for a total cost of \$117 Millions.
- DWU received an official letter from the EPA confirming the closing of the Administrative Order on March 23, 2000

# EPA Administrative Order Cost of Completed Projects

- Manhole Rehabilitation
  - ◆ 2 Projects
  - ◆ \$669,200
- Pipeline Rehabilitation
  - ◆ 10 Projects
  - ◆ \$50,224,657
- Inflow and Infiltration Studies (Master Plan)
  - ◆ 10 Projects
  - ◆ \$13,866,329
- Pipeline Replacement
  - ◆ 14 Project
  - ◆ \$11,786,937
- New Pipeline Construction
  - ◆ 8 Projects
  - ◆ \$40,447,110





# Wastewater Master Plan Program *Implementation Phase (Cont'd)*

- DWU has started a sewer-replacement program to reach the target the 50 years average life for sewers and followed that with an aggressive maintenance program to extend main age to 75 years or beyond.

## Post A.O. Pipeline Replacement Spending

◆ FY 99 – 00	\$10,076,286
◆ FY 00 – 01	\$18,562,911
◆ FY 01 – 02	\$15,892,523
◆ FY 02 – 03	\$21,028,460
◆ FY 03 – 04	\$23,172,028
◆ FY 04 – 05	\$22,106,932
◆ FY 05 – 06	\$23,000,000

# List of Other Texas Cities SSO Initiative Activities

<b>City</b>	<b>Action</b>
Garland	Joining
Rowlett	Joined
Mesquite	Joined
Grand Praire	Joined
Irving	Joined
Farmers Branch	Joined
Arlington	Joining
Fort Worth	Action Plan due in January
Trinity River Authority	Action Plan due in January
Odessa	Joined
Laredo	Joined