
King County Wastewater Treatment Division Asset Management Update

MWPAAC

June 6, 2007



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Today's Presentation

- Objectives
 - Challenges
 - Existing program
 - Accomplishments to date
 - Upcoming activities
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Asset Management Objectives

To manage infrastructure capital assets to minimize the total cost of owning and operating them while delivering the service level that meets regulatory requirements and customers expectations.

To optimize the service delivery and minimize costs over every asset's life.

Asset Management Challenges

- King County is currently responsible for over \$3.8 billion of replaceable assets; by 2010 we will have over \$5.3 billion of replaceable assets
 - Nationwide, our industry is developing the tools for comprehensive Asset Management
 - Looming loss of our knowledge base (significant numbers of retirements coming)
 - Instituting a high-performing systematic approach to Asset Management
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Existing Programs

- Highly respected operations and maintenance programs and personnel
 - Well functioning programs for conveyance and facilities inspections, condition assessment, predictive modeling, and planning
 - Benchmarking Study, 2004 – Identified processes and functions that are critical to WTD and determined those that required improvement
 - Productivity Initiative – Pilot program
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WTD Assets
\$3.8 Billion

Conveyance

\$1.41 Billion

Civil

Extra-long life
assets

> 80 years

**Facilities &
Structures**

\$0.99 Billion

Civil

Long-life
assets

40 - 80 year
old assets

**Process
Equipment**

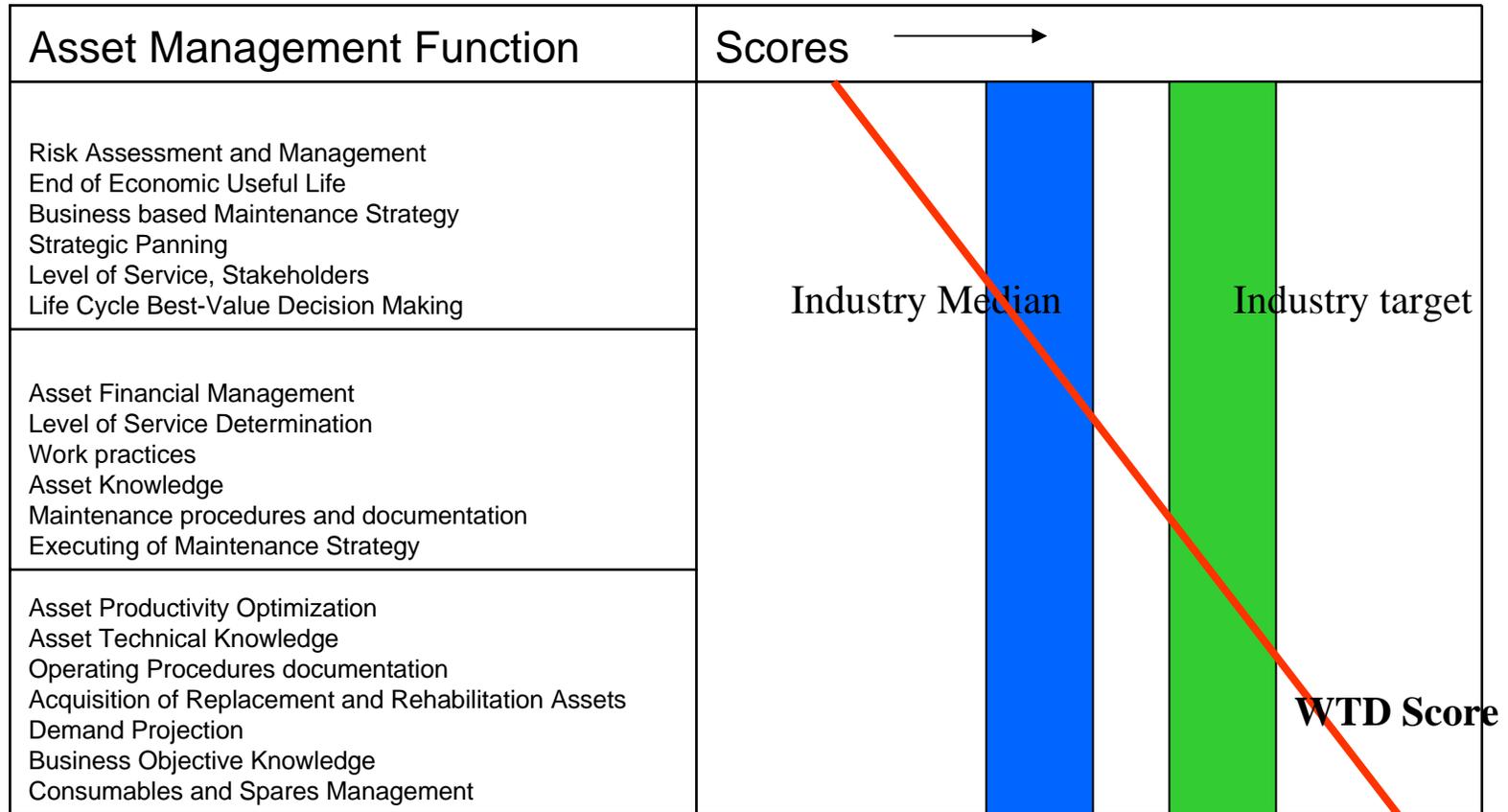
\$1.4 Billion

Mechanical/
Electrical/ Controls

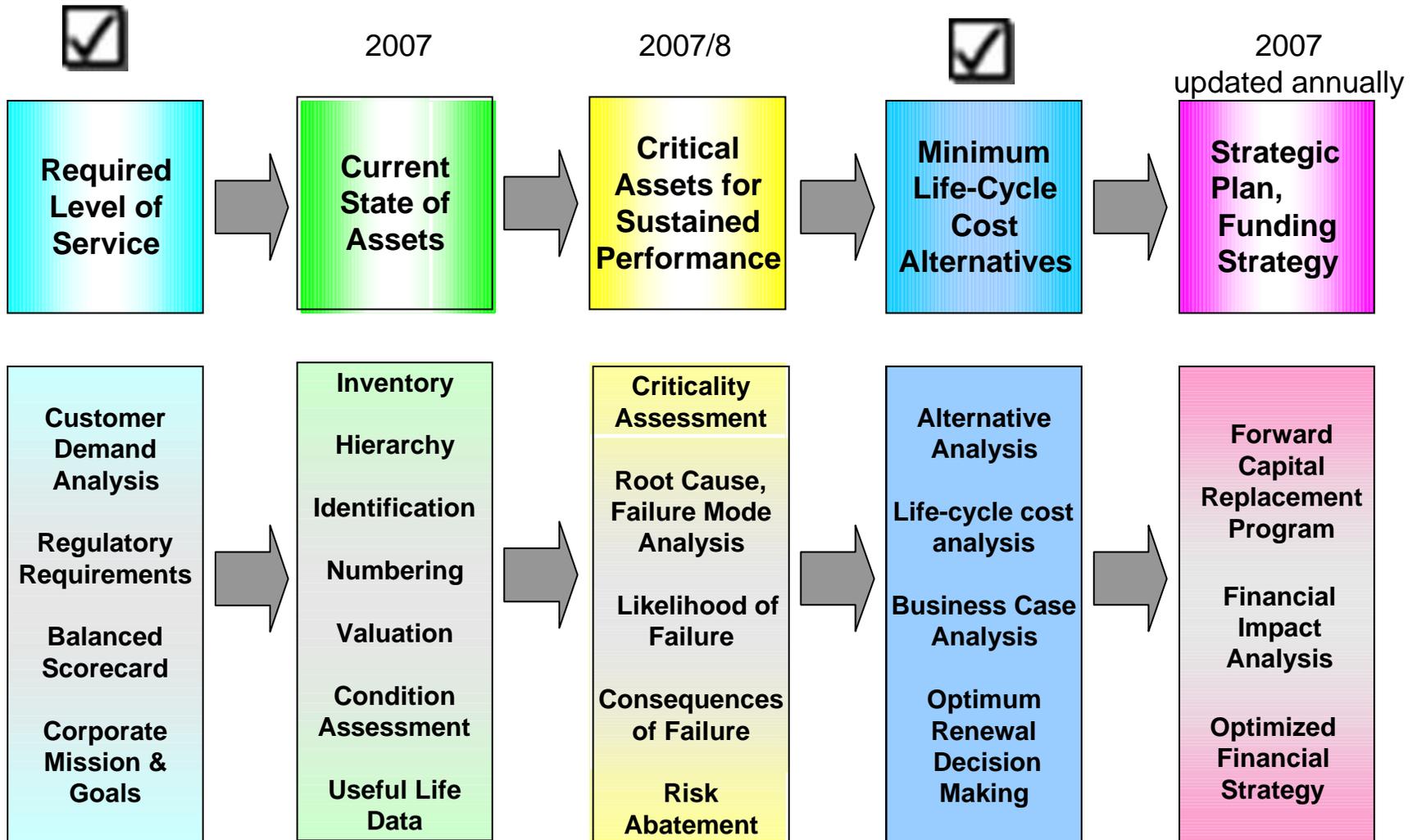
Short to long life
assets

< 40 years

Benchmarking Results, 2004



Core Asset Management Steps



Accomplishments to Date

Levels of Service Analysis- external stakeholders:

Aligns both regulatory and internal policies with community expectations and identifies key performance indicators to track and monitor performance

1. Operate infrastructure to meet all local, state and federal policies and regulations to ensure a safe environment for the public and workers.
 2. Construct new infrastructure to match present and future demands defined by intergovernmental agreements and internal policies.
 3. Maintain financial strategies that meet long-term needs at the lowest life-cycle cost.
 4. Provide emergency response service to customers 24/7.
 5. Maintain highly trained, safe and diverse work force.
 6. Maintain neighborhood safety and minimize neighborhood impacts from WTD facilities and operations.
 7. Provide a sustainable environment by creating resources from wastewater.
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Accomplishments to Date

Life Cycle Cost Analysis:

Required for all new capital project alternative selections. Implementing Life Cycle Cost Analysis for all Maintenance & Replacement Decisions.

Inventory started:

Conducting an extensive asset inventory on all process equipment and facilities. Establishing equipment hierarchies and improving maintenance tracking systems.

WTD Asset Data Collection Progress Results

(Updated: 5/30/2007)	Facility Areas Completed	Total Facility Areas	Facility Areas % Complete	Running Total of Assets	Current Number of Assets in Mainsaver	% Total Assets Counted
Facilities	59	361	16.3%	5,982	25,169	23.8%
Future Facilities in Construction/Design	0	23	0.0%	0	1	0.0%
Totals	59	384	15.4%	5,982	25,170	23.8%

Accomplishments to Date

Criticality Assessment/Failure Mode Analysis (beta-tested)

Richmond Beach and Interbay Pump Stations: Determined all possible ways every piece of equipment can fail (meaning, failure to meet required performance).

Create a program to establish: 1) early detection; 2) methods to avoid; and 3) mitigation measures.

Business Case Evaluation for Maintenance and Repair

Decisions

Pilot Productivity Project for 153 pieces of processing equipment at South Plant.

Ongoing Efforts

- Complete asset inventory
 - Process equipment by September 1, 2007
 - Non-process equipment by November 30, 2007
 - Define *internal* Level of Service for all process equipment
 - Expand Criticality Assessment for all process assets
 - Develop key internal performance metrics
 - Apply risk management concepts
 - Implement Life Cycle Cost Analysis for all Maintenance & Replacement Decisions.
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Forthcoming Efforts

- Develop a comprehensive Asset Management Strategic Plan by the end of 2007 and update annually
 - Define Best Maintenance Practices for all assets
 - Refine the Long-Range Capital Replacement Program to best predict which existing assets will need to be replaced by year and a corresponding budget
 - Implement software that allows us to draw information from multiple databases for easy daily monitoring of key performance indicators
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Questions?

- For more information contact:

Pam Elardo, P.E.

Acting Manager

Asset Management Section

King County Wastewater Treatment Division

206-263-3699

pam.elardo@metrokc.gov
