AN OVERVIEW OF
ASSET MANAGEMENT @ FORT WORTH

ELIZABETH YOUNG, GISP
AGENDA

- What is Asset Management
- Asset Management @ City of Fort Worth
- Streets & Traffic Management Initiative
WHAT IS ASSET MANAGEMENT
Asset management is a process for providing the public with a cost-effective level of service by making the right decisions on the acquisition, maintenance, operation, rehabilitation and disposal of assets.

“A process for maintaining a desired level of customer service at the best appropriate cost.”
DEFINING ASSET MANAGEMENT

- The *Strategy* considers the linkage between condition, service levels, useful life, and repair costs relative to service delivery costs and revenue.

- The *System* provides information needed to make decisions on the acquisition, maintenance, operation, rehabilitation, and disposal of assets.
A COMPLETE ASSET MANAGEMENT STRATEGY/PROGRAM

ASSET MANAGEMENT

Management
- Business Strategy
- Regulatory Strategy
- Organizational Design
- Performance Mgmt
- Process Design
- Resource Planning
- Decision Analysis
- Financial Risk

Engineering
- Planning
- Design
- Operations
- Maintenance
- Reliability
- Protection
- Equipment Health
- Technical Risk

Information
- System Architecture
- System Integration
- Business Intelligence
- Knowledge Mgmt
- Asset Registry
- EAM, CIS, GIS
- CMMS, SCM
- SCADA, OMS
OVERVIEW OF THE ASSET MANAGEMENT ELEMENTS

1. Asset Inventory
   - Implement Asset Inventory & Data Management

2. Asset Criticality
   - Identify Critical Assets (PoF & CoF)

3. Service Levels
   - Establish Performance Standards

4. Asset Condition
   - Rate Assets

5. Optimal Maintenance
   - Plan & Execute PM

6. Life Cycle Costing
   - Apply R&R Decisions
ASSET MANAGEMENT @ THE CITY OF FORT WORTH
SOFTWARE AND DATA EVOLUTION

Water Department Maximo 2005
Storm Water Accela 2013
Streets Home Grown System

Streets/Traffic Management/Facilities/Parks VueWorks 2018

Time & Size
STORMWATER MILESTONES

2009

Asset Inventory Kick-off

2010

Accela Asset Management System Implementation Kick-off

2011

2012

2013

2014

2015

2016

Channel Inventory Kick-off

2017

2018

Proposed Dam Inventory Kick-off

Asset Inventory Project Completed

Accela Asset Management System Go-Live

Accela Phase 2 Go-live

Asset Criticality Program Kick-off

Condition Asset Program Kick-off
STORMWATER ASSET MANAGEMENT PROGRESS

1. Asset Inventory
2. Asset Criticality
3. Service Levels
4. Asset Condition
5. Optimal Maintenance
6. Life Cycle Costing
STORMWATER SUCCESS

SHORT TERM BENIFITS

- Better Data Accuracy
- Reporting Needs Met
- Data collected on SWM Assets vs Addresses
- Work Orders, GIS, and attached documents and images available to staff from the field
- Mobile Devices allow crews to do data entry
STORMWATER SUCCESS

EFFICIENCY BENEFITS

VEGETATION MAINTENANCE

- Paperwork Reduced by 90% +
- Time Savings of at least 1 hr/Day

James Lee, Vegetation Maintenance Supervisor said “I like not having a stack of paper to keep up with daily … to file and store in a folder monthly, yearly, etc ….”
EFFICIENCY BENEFITS

INLET CLEANING

- Eliminated:
  - Paper Maps
  - Crew Day Card
  - Data Entry Backlog
  - Temp Employee

- 3 Year Cycle vs. 8 Year Cycle
STREETS & TRAFFIC MANAGEMENT ASSET MANAGEMENT INITIATIVE
TECHNOLOGY WE HAVE...

What it does:

- Tracks Service Request
- Tracks work including costing
- Allows for dispatching tickets by group or person
- Validate on addresses
- Report on work completed
- ...

![Image of a software interface showing an issue with details like location, direction, and alternate phone number]
TECHNOLOGY WE NEED…

- Track work against Assets
- Assess Condition of Assets
- Schedule Preventative Maintenance
- Utilize Condition to prioritize work through decision trees
- Conduct Budget Forecasting
- Mobile
- ....
SOFTWARE REQUIREMENTS

200+ Requirements
- Service Requests/Work Orders
- Asset Inventory and Mapping
- Look and Feel
- Usability
- Pavement Management
- Reporting
- Mobile

Table:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Priority</th>
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</thead>
<tbody>
<tr>
<td>Provide statistical analysis of asset history and condition data to support predictive maintenance, and generate work orders based on the outcomes of analysis.</td>
<td>High</td>
</tr>
<tr>
<td>Provide statistical analysis of asset history and condition data to support root cause analysis of failures, and generate work orders based on the outcomes of analysis.</td>
<td>High</td>
</tr>
<tr>
<td>Provide statistical analysis of asset history and condition data to support asset criticality assessment and tracking.</td>
<td>High</td>
</tr>
<tr>
<td>Provide statistical analysis of asset history, criticality, and condition data to support asset prioritization.</td>
<td>High</td>
</tr>
</tbody>
</table>

**Asset Inventory and Mapping**

- Ability to identify and map location of all assets and infrastructure including external infrastructure (e.g. private, City, etc.) through integration with the City’s ESRI GIS. (High)
- Support inspections and condition monitoring, and storing results for the life of the asset. (High)
- Provide tools for scheduling routine inspection and conducting routine condition assessments for user defined assets. (High)
- Ability to create and manage equipment and materials inventory. (Total cost) (High)
- Warehousing (see 47). Intergration Point (Medium)
- Ability to track and monitor warranty data on assets, including system, component, and accessory warranties and/or maintenance bonds. (High)
- Track each warranty assigned to an asset by date, usage, time, and other pertinent parameters (e.g. hours) and the Vendor/Contractor responsible for the warranty and/or maintenance bond. (High)
- Ability to track asset maintenance by geographic boundary (e.g. Quadrant or Council District). (High)
STREETS & TRAFFIC TIMELINE

2016

- Streets and Traffic Inventory
  - July
  - August
  - September
  - October
  - November
  - December

2017

- Streets Implementation
  - July
  - August
  - September
  - October
  - November
  - December

- Traffic Management Implementation
  - January
  - February
  - March

- Streets and Traffic Inventory
  - January
  - February
  - March
## INVENTORY

<table>
<thead>
<tr>
<th>Assets</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Pavement PCI</td>
<td>32,124 (Lane Miles)</td>
</tr>
<tr>
<td>Pavement OCI</td>
<td>32,124 (Lane Miles)</td>
</tr>
<tr>
<td>Curb &amp; Gutter</td>
<td>299,673</td>
</tr>
<tr>
<td>Pavement Symbols</td>
<td>9,416</td>
</tr>
<tr>
<td>Pavement Striping</td>
<td>22,237 (1,433 Linear Miles)</td>
</tr>
<tr>
<td>Streetlights</td>
<td>61,192</td>
</tr>
<tr>
<td>Signs</td>
<td>127,581</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>44,532 (2,435 Linear Miles)</td>
</tr>
<tr>
<td>Sidewalk Ramps</td>
<td>30,572</td>
</tr>
<tr>
<td>Railroad Signals</td>
<td>372</td>
</tr>
<tr>
<td>Traffic Signals</td>
<td>4,582</td>
</tr>
<tr>
<td>Poles</td>
<td>???</td>
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QUALITY CONTROL
### QUALITY CONTROL

<table>
<thead>
<tr>
<th>Assets</th>
<th>Quantity</th>
<th>Assets QCed</th>
<th>QC Percentage</th>
<th>Iterations</th>
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<tbody>
<tr>
<td>Pavement PCI</td>
<td>32,124 (7,518 Lane Miles)</td>
<td>425 + Analysis</td>
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<td>Curb &amp; Gutter</td>
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<tr>
<td>Pavement Striping</td>
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<td>1.7%</td>
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<tr>
<td>Streetlights</td>
<td>61,192</td>
<td>2953</td>
<td>2.7%</td>
<td>2</td>
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<tr>
<td>Signs</td>
<td>127,581</td>
<td>2871</td>
<td>2.3%</td>
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</tr>
<tr>
<td>Sidewalks</td>
<td>44,532 (2,435 Linear Miles)</td>
<td>728 + Analysis</td>
<td>1.6%</td>
<td>2</td>
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<tr>
<td>Sidewalk Ramps</td>
<td>30,572</td>
<td>1112</td>
<td>3.6%</td>
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<td>Railroad Signals</td>
<td>372</td>
<td>101</td>
<td>27.15%</td>
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<tr>
<td>Traffic Signals</td>
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<td>992</td>
<td>21.6%</td>
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<tr>
<td>Poles</td>
<td>???</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
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Pavement Condition Index (PCI) is a numerical index between 0 and 100, which is used to indicate the condition of a specific section of road pavement.

Overall Condition Index (OCI) utilizes the PCI but also takes into account other factors such as, curb/gutter condition and missing curb.

Simple Condition Rating is being used for all other assets currently using a good, fair and poor index to describe condition with a description defining each of these based on asset type.
IMPLEMENTATION PROCESS

Work Orders

- Link Assets
- Configure SR & WO
- Data Conversion & WO Migration
- Testing
- Go Live
- Review
- Configuration

Advanced Asset Management

- Risk, Budgets, Reports
- Testing
- Go Live
- Training
WHAT DO WE EXPECT TO GET?

SHORT TERM:
- Better Reporting
- Less Paper
- Better Customer Service
- Understand and Communicate the Condition of our Assets
- Real Time Updates
- Better Plan and Coordinate Preventative Maintenance
“It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.”
— Arthur Conan Doyle, Sherlock Holmes
Questions