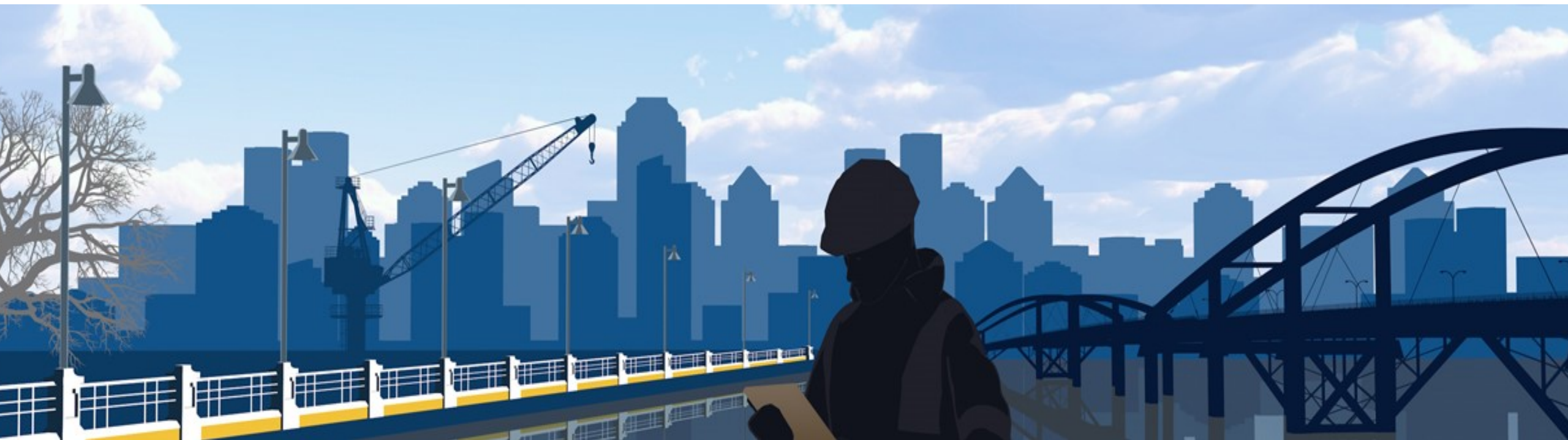# AN OVERVIEW OF ASSET MANAGEMENT @ FORT WORTH

ELIZABETH YOUNG, GISP

# AGENDA

- What is Asset Management

- Asset Management @ City of Fort Worth

- Streets & Traffic Management Initiative

WHAT IS ASSET MANAGEMENT

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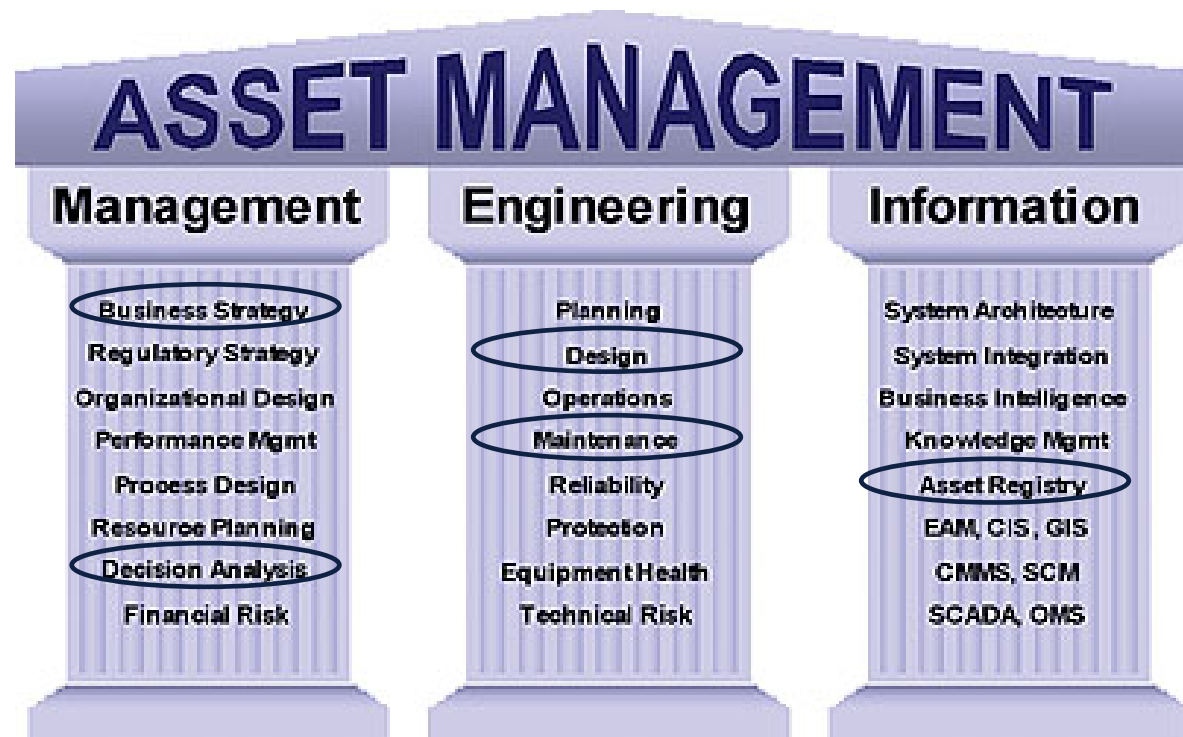
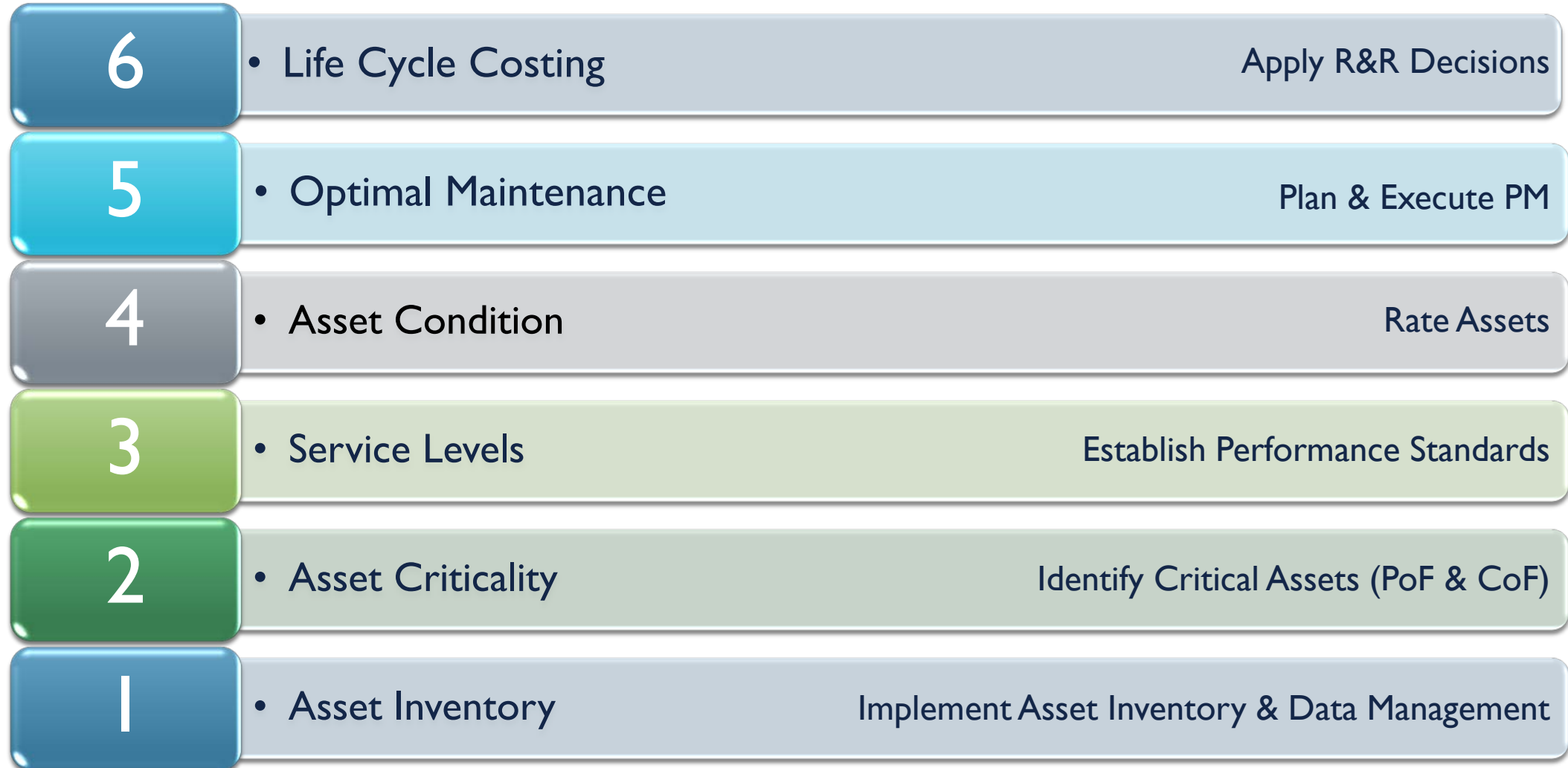"A process for maintaining a desired level of customer service at the best appropriate cost."
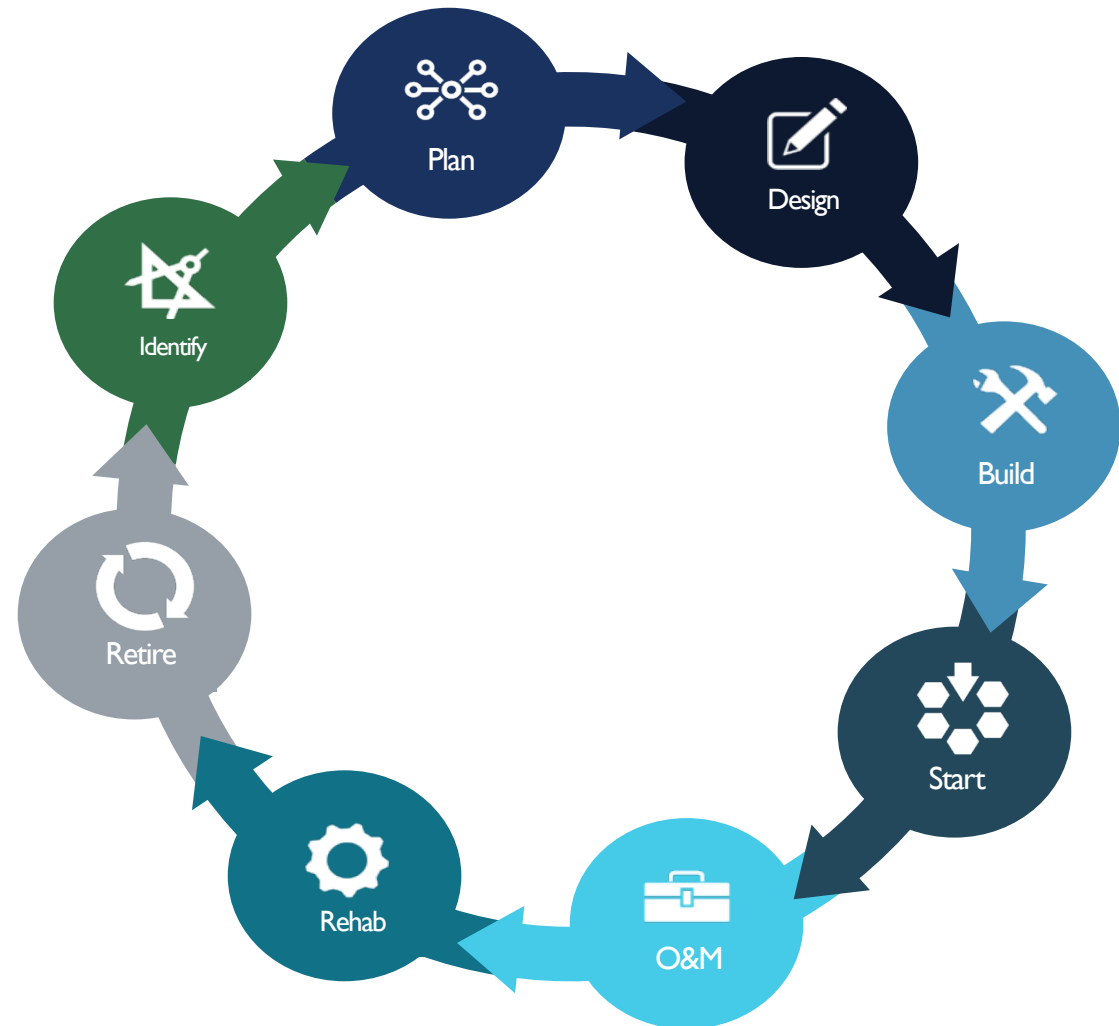
# DEFINING ASSET MANAGEMENT

- 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

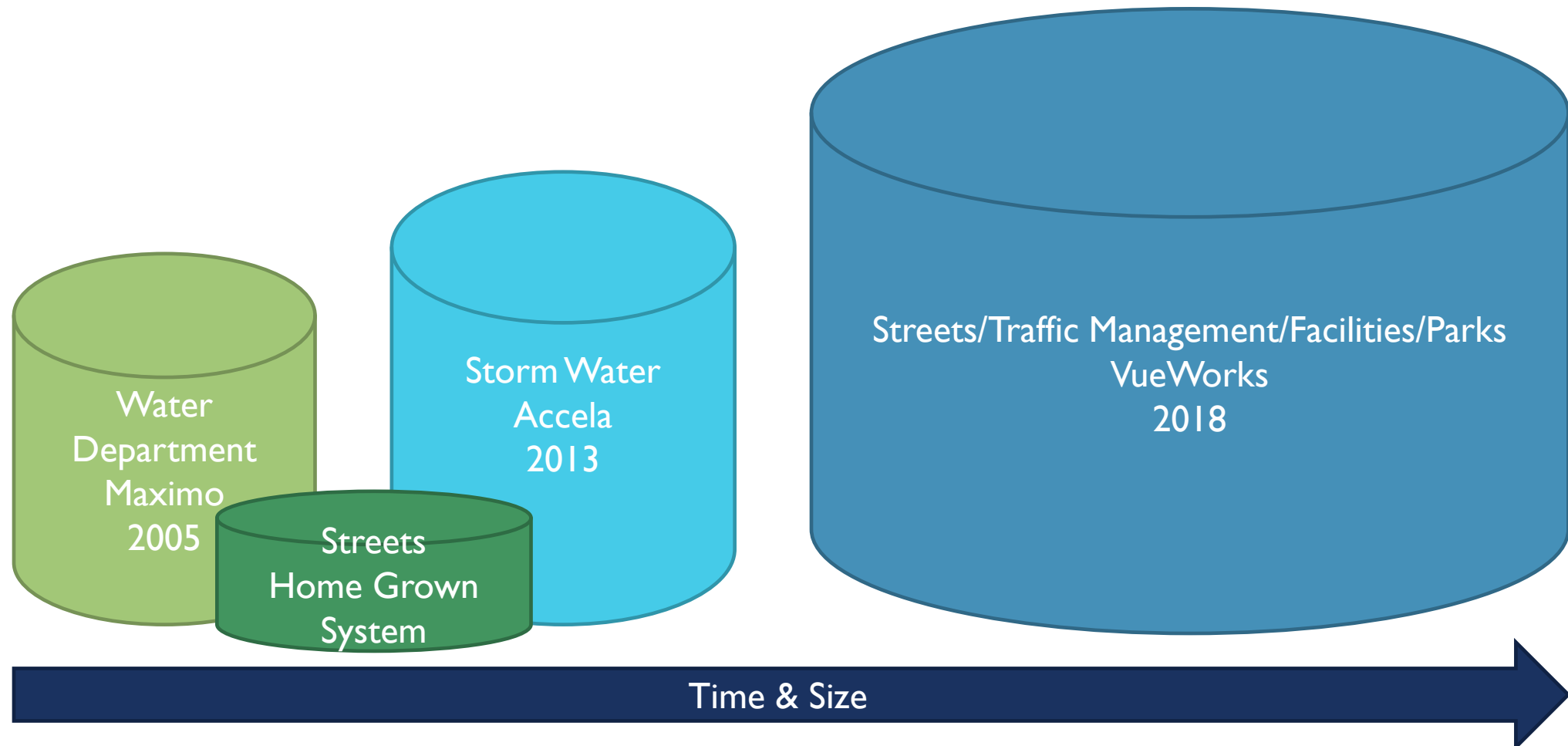# A COMPLETE ASSET MANAGEMENT STRATEGY/PROGRAM

# OVERVIEW OF THE ASSET MANAGEMENT ELEMENTS

**6** • Life Cycle Costing — Apply R&R Decisions

**5** • Optimal Maintenance — Plan & Execute PM

**4** • Asset Condition — Rate Assets

**3** • Service Levels — Establish Performance Standards

**2** • Asset Criticality — Identify Critical Assets (PoF & CoF)

**1** • Asset Inventory — Implement Asset Inventory & Data Management

ASSET MANAGEMENT @ THE CITY OF FORT WORTH

# SOFTWARE AND DATA EVOLUTION

Water Department Maximo 2005

Streets Home Grown System

Storm Water Accela 2013

Streets/Traffic Management/Facilities/Parks VueWorks 2018

Time & Size

# STORMWATER MILESTONES

**Asset Inventory** Kick-off

**Asset Inventory Project** Completed

**Channel Inventory** Kick-off

**Proposed Dam Inventory** Kick-off

| 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------|------|------|------|------|------|------|------|------|------|

**Accela Asset Management System** Implementation Kick-off

**Accela** Go-Live

**Accela Phase 2** Go-live

**Asset Criticality** Kick-off

**Condition Asset Program** Kick-off

# STORMWATER ASSET MANAGEMENT PROGRESS

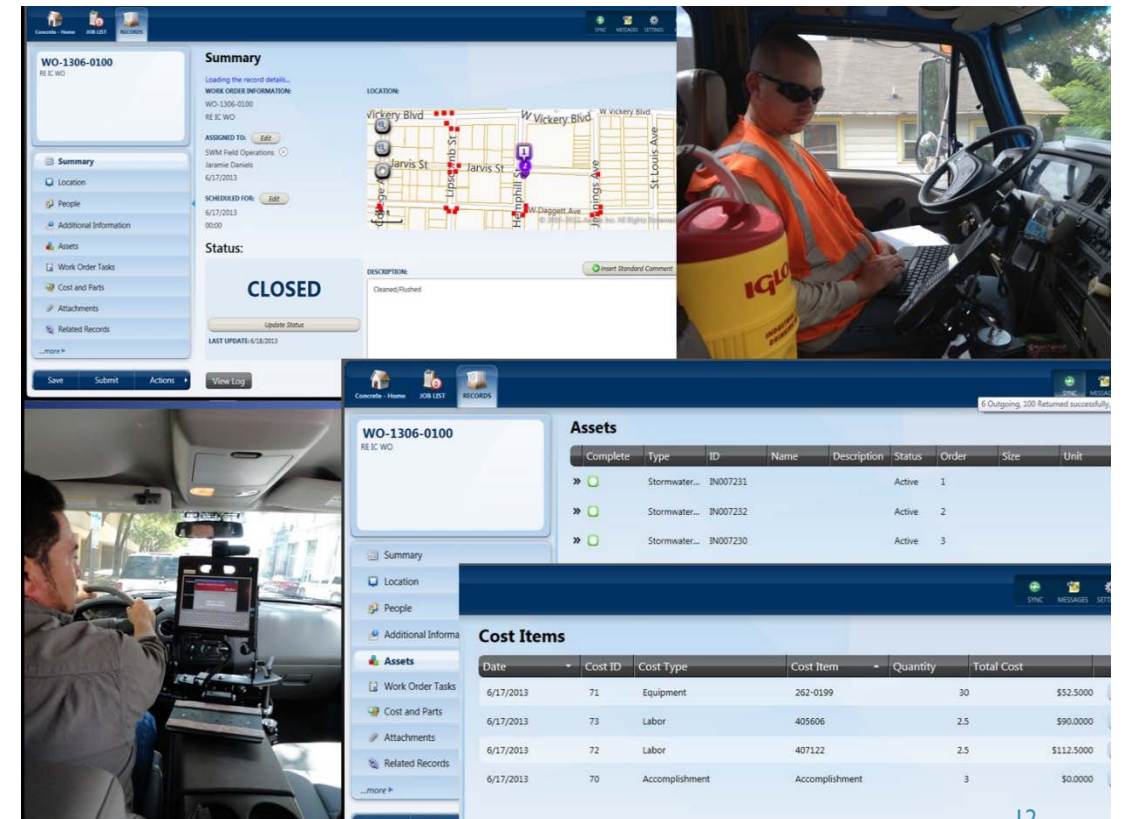| 6 | • Life Cycle Costing |
|---|---|
| 5 | • Optimal Maintenance |
| ✓ 4 | • Asset Condition |
| ✓ 3 | • Service Levels |
| ✓ 2 | • Asset Criticality |
| ✓ 1 | • Asset Inventory |
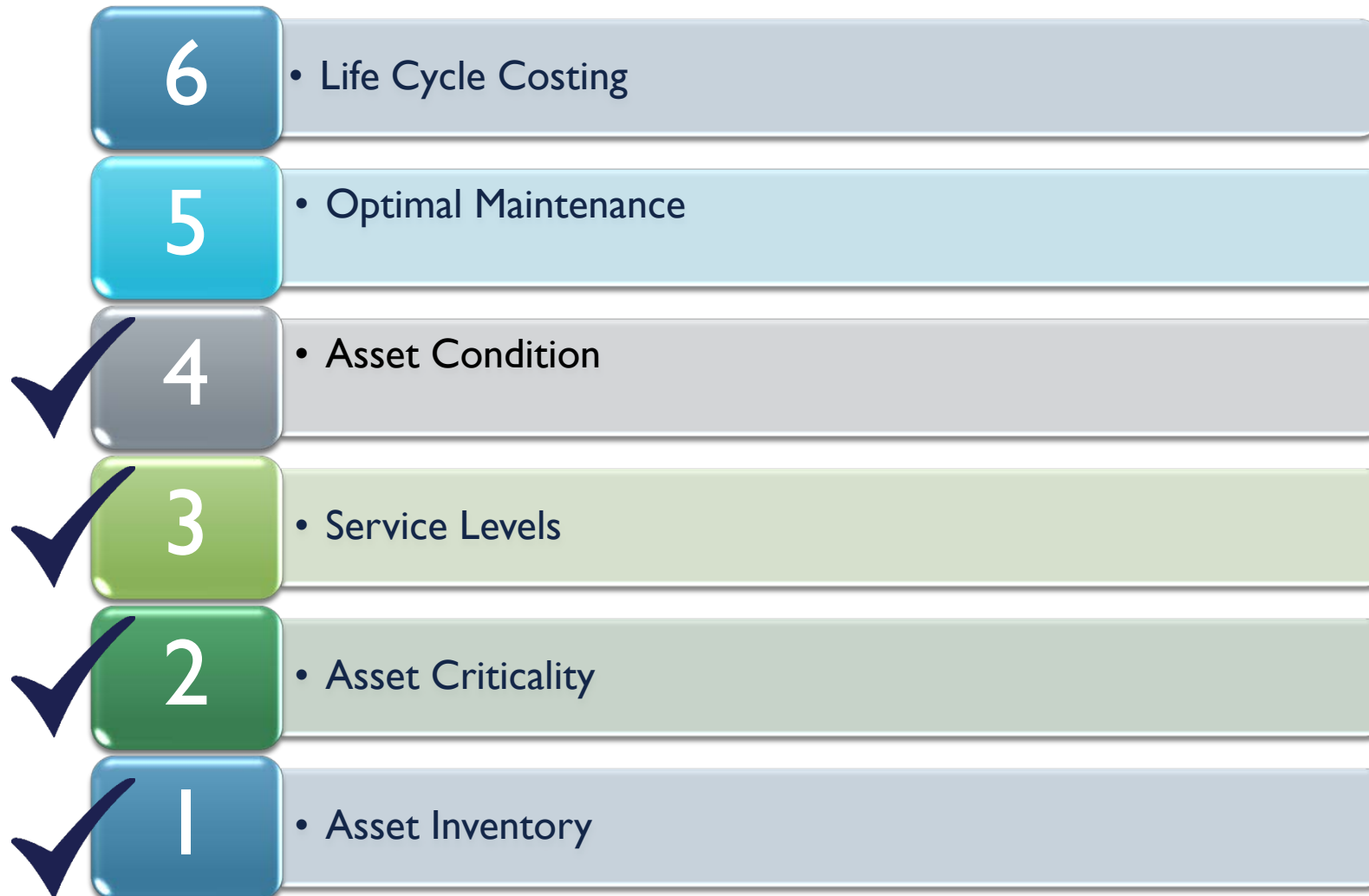
# STORMWATER SUCCESS

## 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

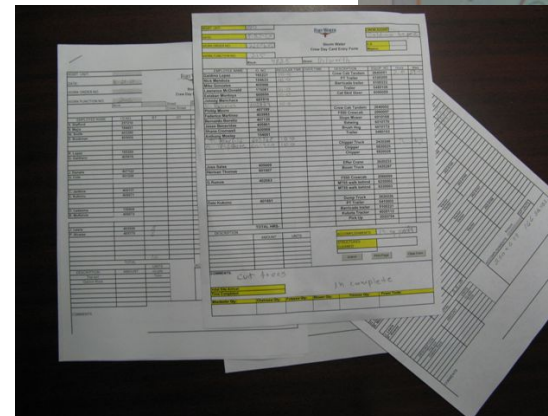- Paperwork Reduced by 90% +
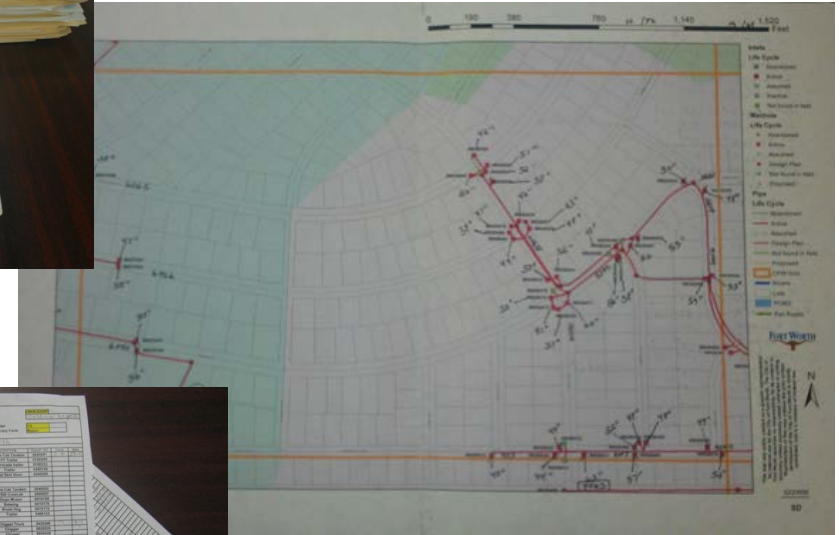
- Time Savings of at least 1hr/Day

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 …."

# STORMWATER SUCCESS

## EFFICIENCY BENEFITS
### INLET CLEANING

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

- 3 Year Cycle vs. 8 Year Cycle

STREETS & TRAFFIC MANGEMENT 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
- …

# 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

| # | Requirement | Rank Low, Medium, High |
|---|---|---|
| 34 | Provide statistical analysis of asset history and condition data to support predictive maintenance, and generate work orders based on the outcomes of analysis. | High |
| 35 | 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. | High |
| 36 | Provide statistical analysis of asset history and condition data to support asset criticality assessment and tracking. | High |
| 37 | Provide statistical analysis of asset history, criticality, and condition data to support asset prioritization. | High |
| 38 | | |
| 39 | | |
| 40 | **Asset Inventory and Mapping** | |
| 41 | | |
| 42 | | |
| 43 | 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 |
| 44 | Support inspections and condition monitoring, and storing results for the life of the asset. | High |
| 45 | Provide tools for scheduling routine inspection and conducting routine condition assessments for user defined assets. | High |
| 46 | Ability to create and manage equipment and materials inventory. (Total cost) | High |
| 47 | Warehousing (see 47). Intergration Point | Medium |
| 48 | Ability to track and monitor warranty data on assets, including system, component, and accessory warranties and/or maintenance bonds. | High |
| 49 | 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 |
| 50 | Ability to track asset maintenance by geographic boundary (ex. Quadrant or Council District) | High |

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# STREETS & TRAFFIC TIMELINE

## 2016

Streets and Traffic Inventory

July › August › September › October › November › December › January › February › March

## 2017

Traffic Management Implementation

Streets Implementation

Streets and Traffic Inventory

July › August › September › October › November › December › January › February › March

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# INVENTORY

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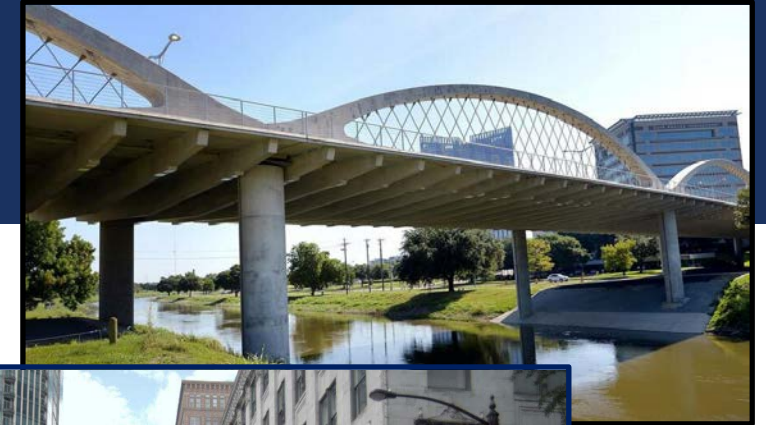
# QUALITY CONTROL
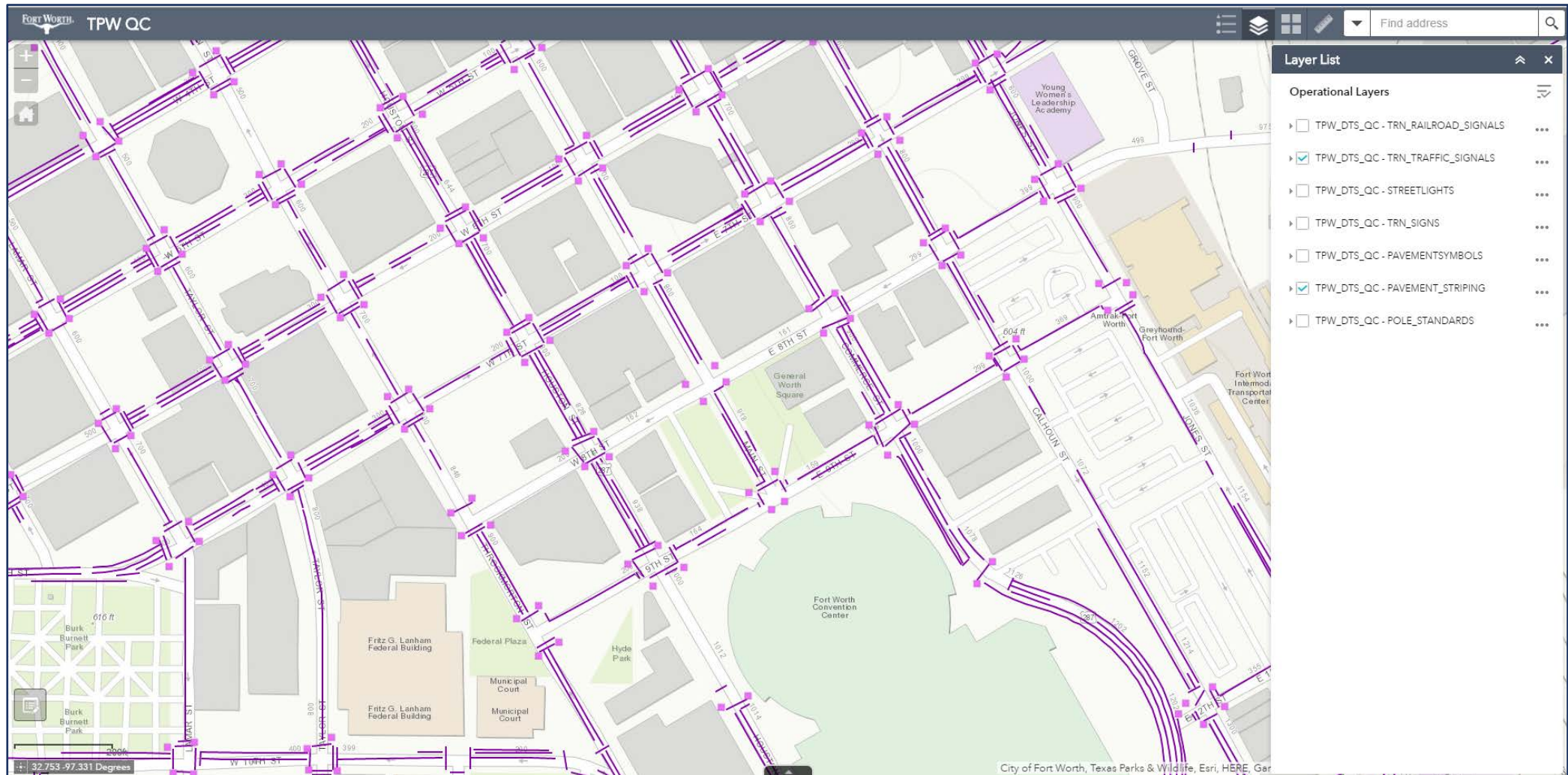
# QUALITY CONTROL

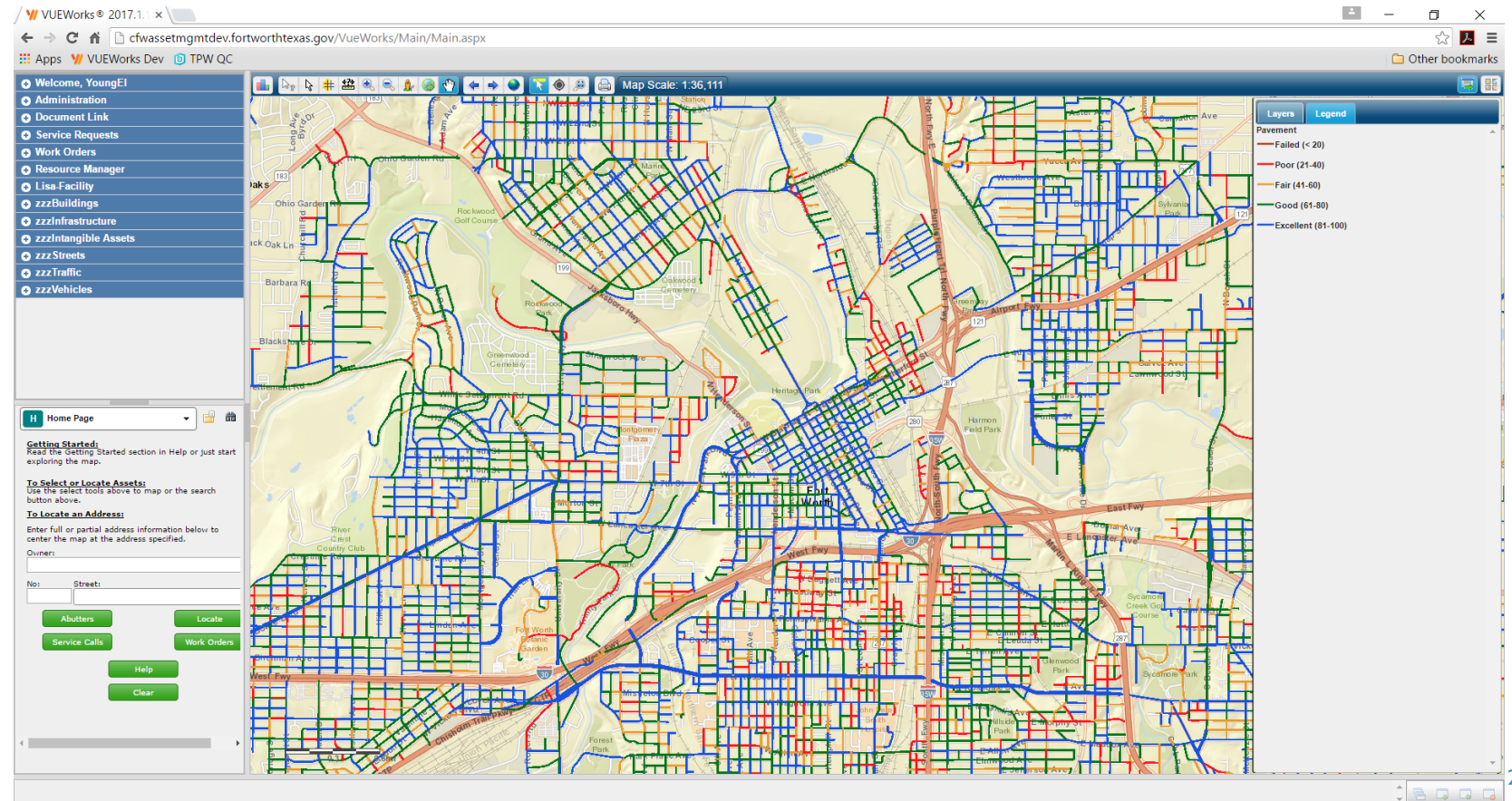| Assets | Quantity | Assets QCed | QC Percentage | Iterations |
|---|---|---|---|---|
| Pavement PCI | 32,124 (7,518 Lane Miles) | 425 + Analysis | NA | 2 |
| Pavement OCI | 32,124 (7,518 Lane Miles) | 489 + Analysis | NA | 4 |
| Curb & Gutter | 299,673 | 45,873 | 15.3% | 3 |
| Pavement Symbols | 9,416 | 1128 | 12.0% | 3 |
| Pavement Striping | 22,237 (1,433 Linear Miles) | 388 | 1.7% | 4 |
| Streetlights | 61,192 | 2953 | 2.7% | 2 |
| Signs | 127,581 | 2871 | 2.3% | 2 |
| Sidewalks | 44,532 (2,435 Linear Miles) | 728 + Analysis | 1.6% | 2 |
| Sidewalk Ramps | 30,572 | 1112 | 3.6% | 2 |
| Railroad Signals | 372 | 101 | 27.15% | 2 |
| Traffic Signals | 4,582 | 992 | 21.6% | 2 |
| Poles | ??? | NA | NA | NA |

# 4 ASSET CONDITION

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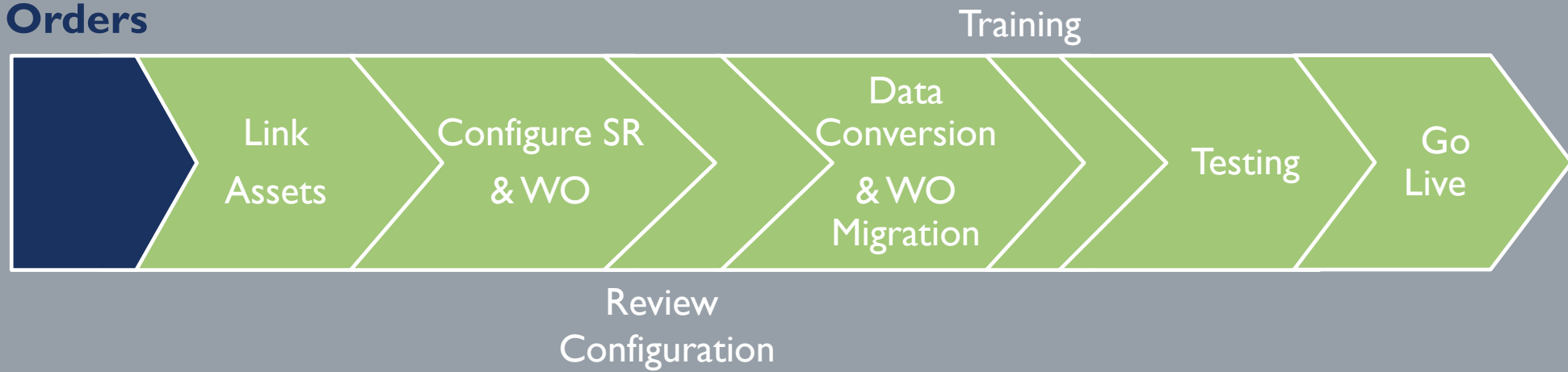
**Overall Condition Index** (OCI) utilizes the PCI but also takes into account other factors such as, curb/gutter condition and missing curb.

**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.



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# IMPLEMENTATION PROCESS

**Work Orders**

Training

Link Assets → Configure SR & WO → Data Conversion & WO Migration → Testing → Go Live

Review Configuration

**Advanced Asset Management**
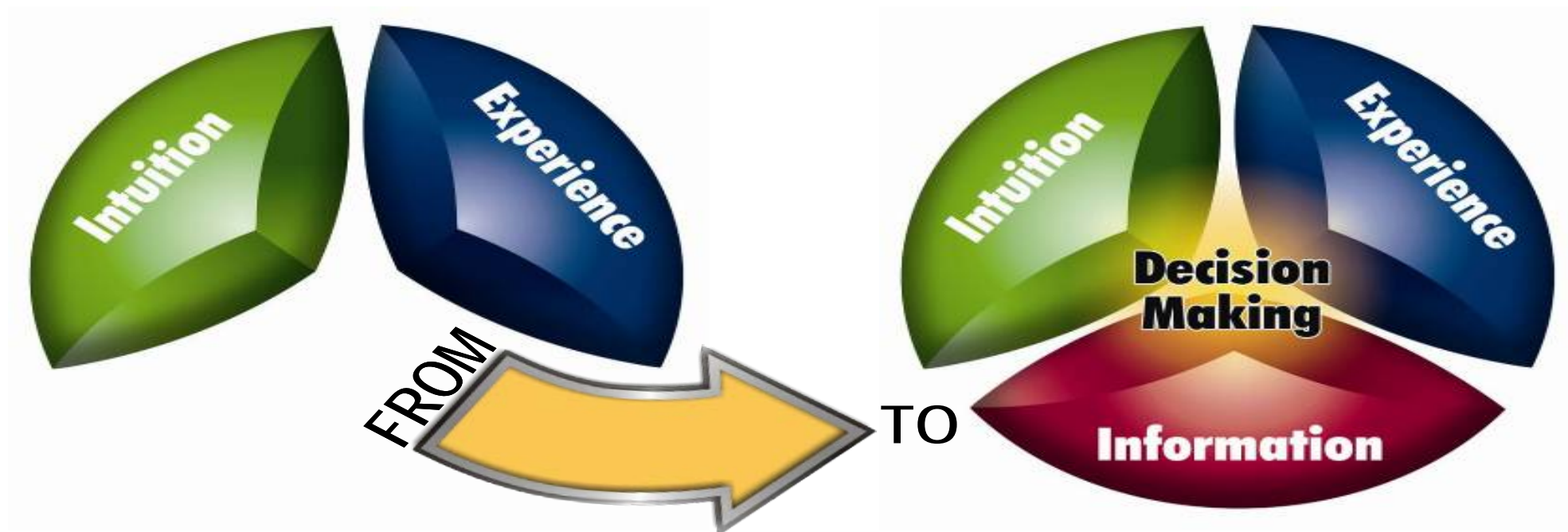
Risk, Budgets, Reports → Testing → Go Live

Training

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# 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

# WHAT DO WE EXPECT TO GET?



"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