

City of Olathe

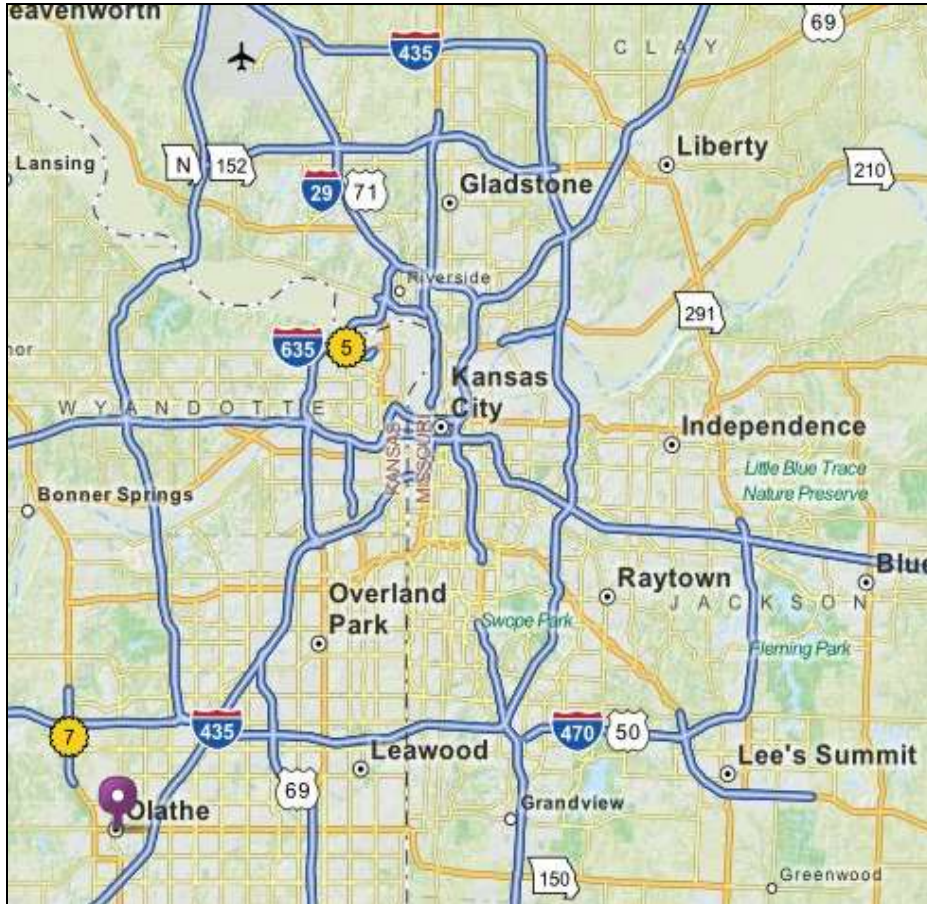
Adopting a Holistic Approach to Asset Management



*Setting the Standard for Excellence
in Public Service*



The City of Olathe



- Area of 61 square miles
- 4th largest City in Kansas
- Population of 130,045
- Full Service City

More than Water & Sewer

- 300 Employees
- 6 Divisions
- 6 Funds
 - Central Garage
 - General Fund
 - Solid Waste
 - Stormwater
 - System Development Fund
 - Water & Sewer
- 32 Programs



Infrastructure Inventory

Description of Inventory

	Streets and Sidewalks	Includes streets (arterials, collectors, local; curb and gutter), sidewalks, bridges and auxiliary structures (such as gates, streetscape and others).
	Utility Drainage	Includes sanitary sewer, stormwater and wastewater treatments.
	Solid Waste	Includes operation and administration facilities, customer accounts, transfer station, household hazardous waste facility and compost facility.
	Water Services	Includes water distribution, water metering and water production.
	Traffic Control	Includes traffic signals, signs, markings, street lighting and school beacons.
	Buildings	Includes public works and operation facilities (e.g. administrative and maintenance), laboratory services
	Fleet	Includes city vehicles and shop equipment.
	Technology Equipment	Includes servers, network, all communication equipment.

In the Beginning

- Asset Management done in silos
- Gaps in processes
- Unorganized and inaccurate asset inventory
- Asset condition information was inconsistent or non-existent
- Various “homegrown” asset management systems



What We Knew

- Assets were aging faster than we could replace them
- Investments in infrastructure had been on the decline since '08
- We were not adequately planning for the wave of needed infrastructure replacement
- Continued growth required new infrastructure development
- Regulations made infrastructure improvements even more costly

But.....Leadership was committed to and supported a comprehensive approach to Asset Management

Our Current State

- We are “doing” Asset Management
- Designing a Comprehensive Asset Management (CAM) System
 - Shared consensus and goals that include:
 - Creating cross-divisional collaboration “matrix”
 - Developing champions within all levels of the organization
 - (Re)defining coordinated business process



(Re)Defining the Organization

- 2010 Reorganization
 - Consolidation of three Departments
- 2013 APWA Reaccreditation
- Creation of Asset Management Team
- Department wide process review
 - Documentation and analysis of Standard Operating Procedures (SOPs)
 - Development of in-house Procedure Management System (OPro)



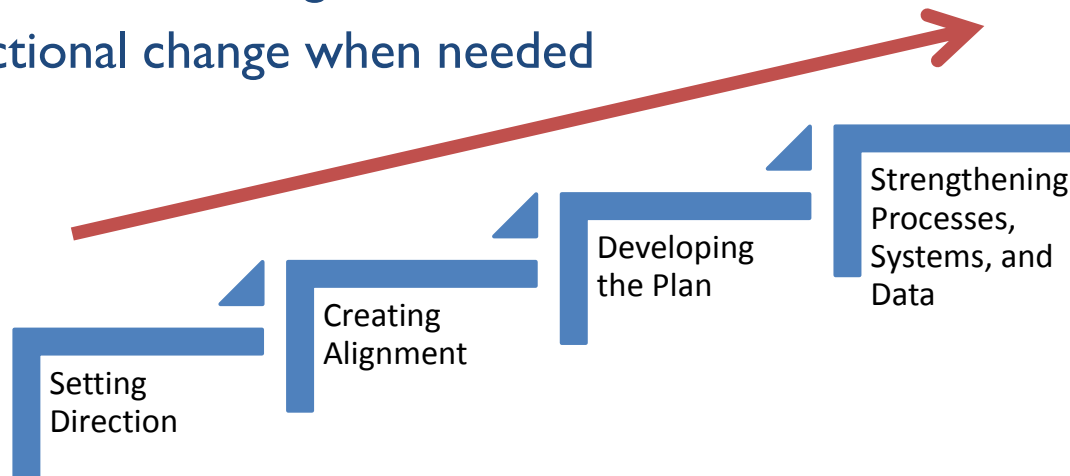
Stewardship of Infrastructure

- Strategies:
 - Maximize value of existing and future infrastructure
 - Developing a comprehensive asset management inventory and system
 - Developing sustainable levels of service and performance targets
 - Identify priorities and optimize infrastructure investments
 - Comply with current regulatory demands and help shape future regulations



Developing the Culture

- Charting the course
 - Program development, objectives, goals, levels of service
- Putting the “right” people in the “right job”
- Communication
- Assessing performance
 - Reinforce and reward organizational values
 - Make directional change when needed

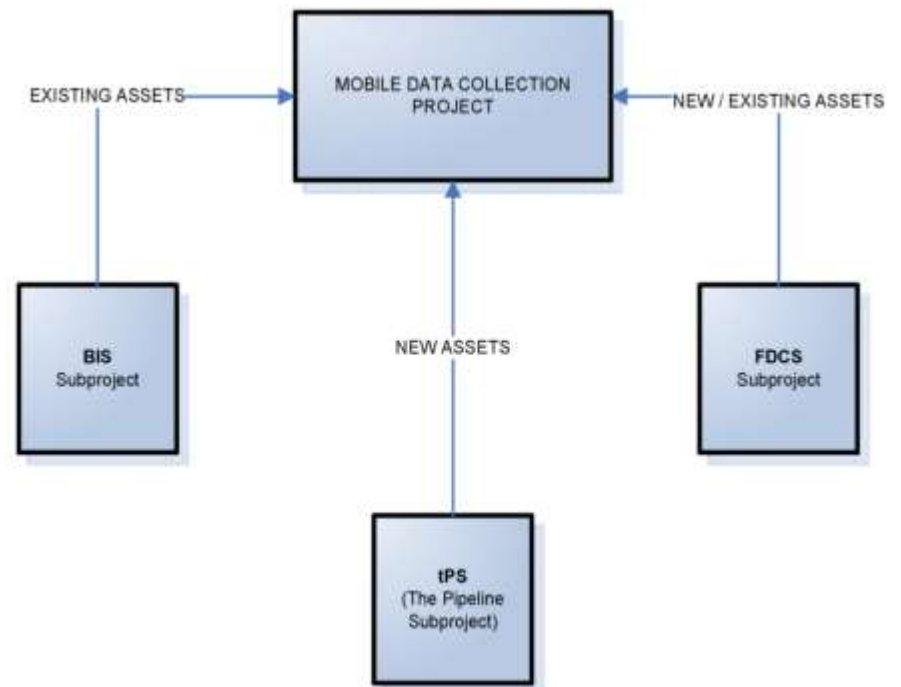


Data Collection, Inventory and Management

- Conducting asset inventory and condition assessment

- Mobile Data Collection (MDC)

- Baseline Inventory Sub-project (BIS)
- Field Data Collection Sub-project (FDCS)
- the Pipeline Sub-project (tPS)



Utilization of Information System Tools

Consolidation of work order and asset management systems to develop a better understanding of current infrastructure

▶ In Use

- Bridge Inspections Data
- Pavement Management
- Street Maintenance
- Sewer Manhole
- Sewer Gravity Mains
- Signs
- Street Light Supports
- Circuits
- Junction Boxes
- Power Supplies
- Cabinets
- Water Valves
- Water Hydrants
- Water Mains
- Sewer ARVs
- Sewer Vaults
- Water Asset Failures

▶ In the Works

- Stormwater Inlets
- Stormwater Outlets
- Stormwater Pipes
- Stormwater Channels
- Stormwater Junctions

- Bridge Inspections Data
- Pavement Management
- Street Maintenance
- Circuits
- Junction Boxes
- Power Supplies
- Cabinets
- Water Valves
- Water Hydrants
- Water Mains
- Sewer ARVs
- Sewer Vaults
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▶ Interfaces

- Eone-Labor, Equipment
- Billing System-Sewer & Water Work Requests
- WinCan CCTV inspection system (future)
- (future)-Work Requests
- ERPortal
- Mission Control

Implementation Objectives :

- Centralized Asset Inventory
- Overall Condition Index (OCI) by Asset

Systems

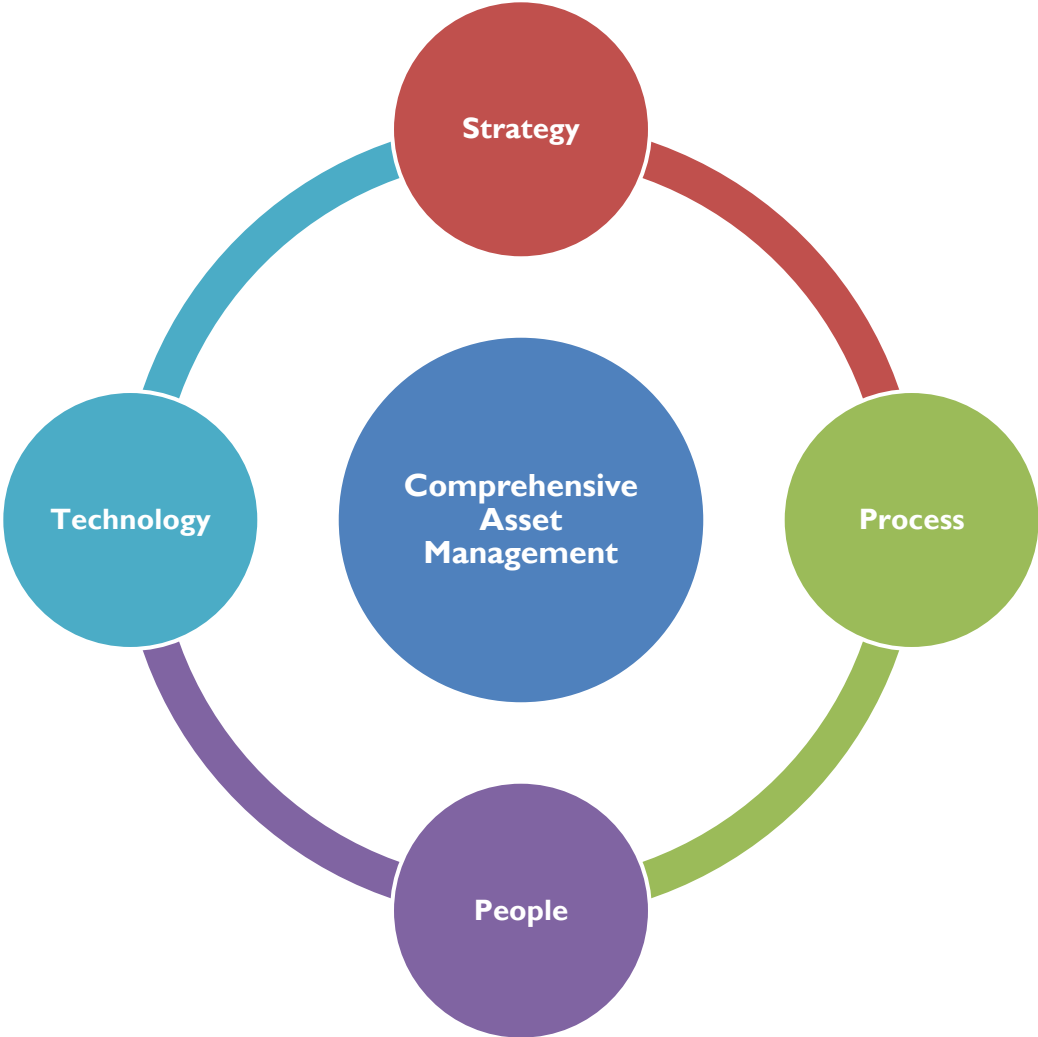


So Now What?



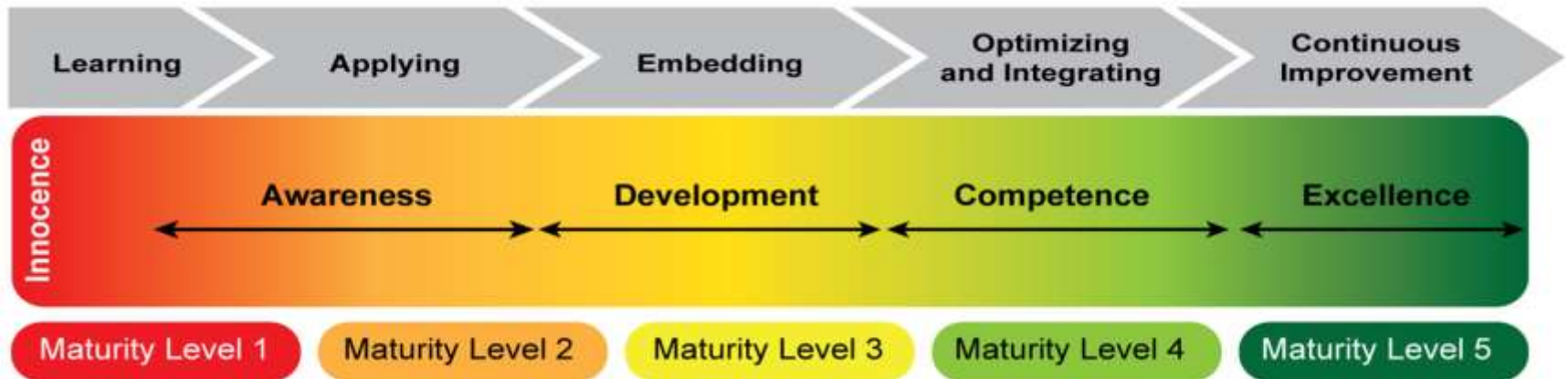
- Asset Management Road Map
 - Purpose:
 - Provide an assessment of the current state of the Olathe's Asset Management program
 - Recommend (prioritized) initiatives for further implementation
 - Objectives:
 - Identify strengths and opportunities for improvement
 - Develop a longer term Roadmap to improve management and performance

The Roadmap Process



The Roadmap Process

- Contracted with CH2MHILL
- CH2MHILL's team conducted an exhaustive review of Asset Management related documents, processes and procedures
- CH2MHILL interviewed over 20 of Olathe's senior leaders through out the organization to validate conclusions from document review and to gather staff opinions on opportunities for improvements

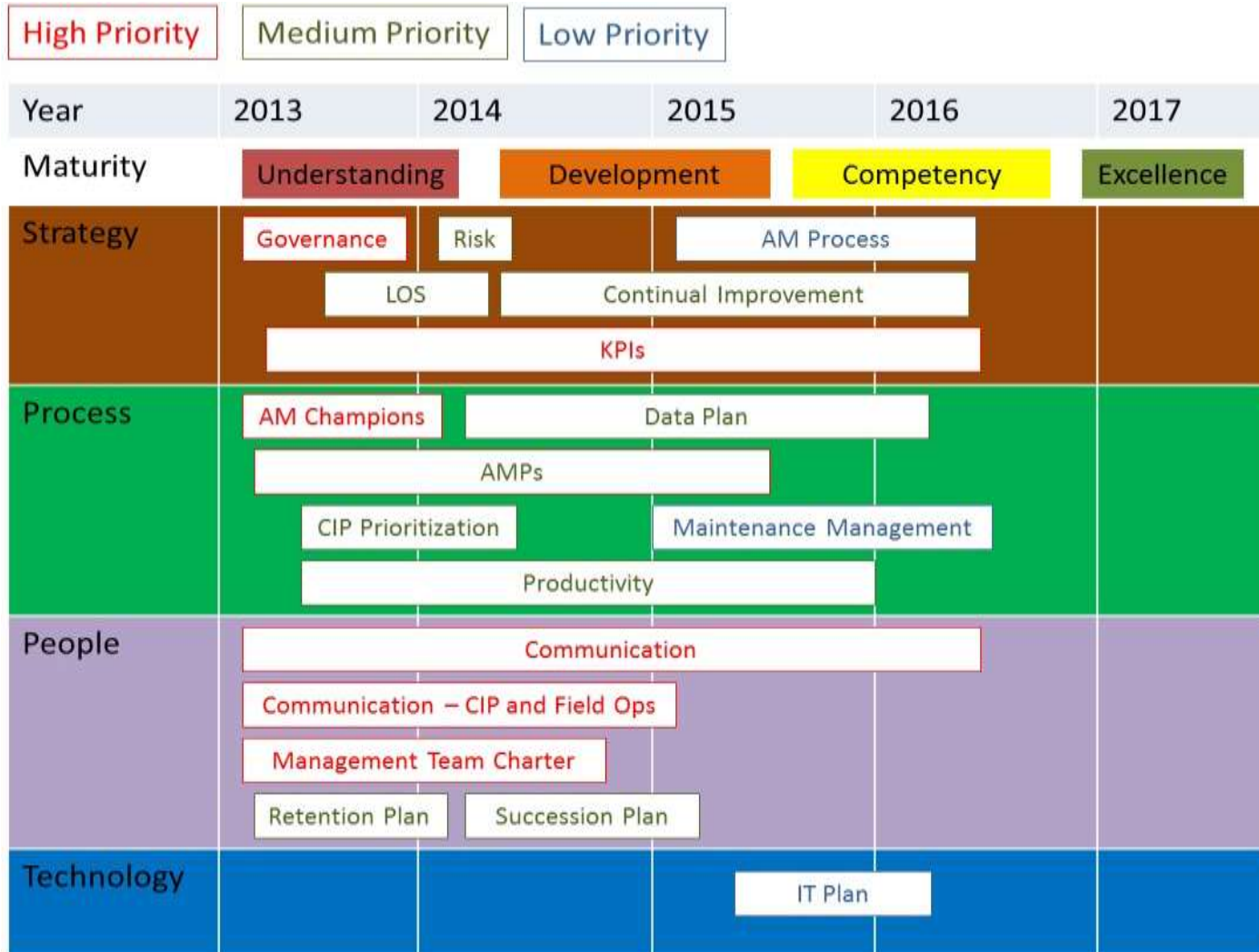


The Roadmap Process

- CH2MHILL facilitated a self assessment workshop attended by over 20 Olathe's senior leaders
 - Attendees assessed the organization's maturity (capabilities), on a 1 to 5 scale, related to 36 different AM processes
 - CH2MHILL used its Comprehensive Asset Management Review and Assessment (CAMRA) tool to structure the discussion
- CH2MHILL prepared a report and Roadmap reflecting its findings and results of the self assessment workshop, and a recommended list of initiatives

The screenshot displays the CAMRA Assessment Form interface. At the top, it shows the title 'CAMRA Assessment Form' and a 'Question' section with the number '5' and the text 'Strategy'. Below this is a 'Name' field containing 'Business Process Mapping'. The form is divided into five levels (Level 1 to Level 5) with corresponding descriptions of maturity. Level 3 is highlighted in yellow. The form also includes a 'Current Date' field with the number '3' and a 'CH2MHILL' logo at the bottom right.

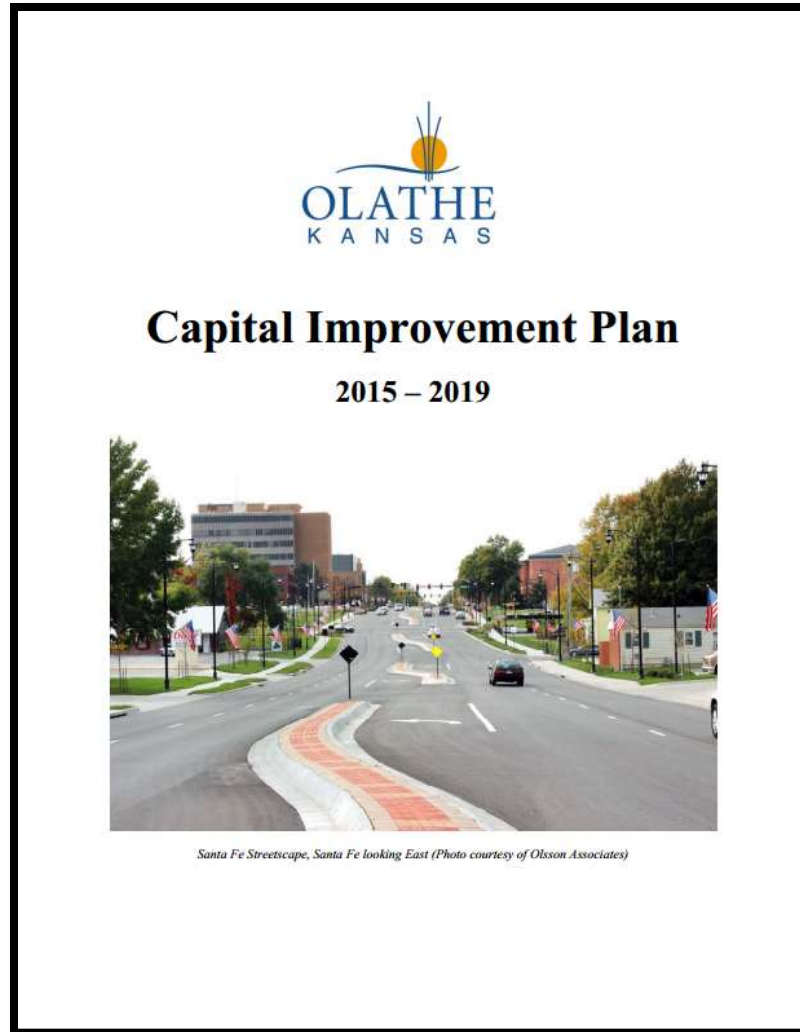
Strategic Roadmap



Initiatives and Actions

- Developed a standardized Utilities CIP prioritization framework that considers risk and consequence of failure
- Developed a Hydrant AMP
- Developed a draft IT Master Plan
- Developed plans to retain skilled employees and reduce costly turnover
- Formalized Levels of Service (LOS) and corresponding Key Performance Indicators (KPIs)
- Piloted BCE process
- Created Maintenance Manager position in Utilities Maintenance

CIP Prioritization Process



Objectives

- Develop a consistent approach to the justification and prioritization of competing projects
- Develop a CIP that was driven by a rigorous understanding of asset need including risk measurements and root cause analysis
- Adjust funding requirements to suit the assets needs

CIP Prioritization Process

- Projects were selected from three categories –
 - Renewal and Replacement Projects
 - Level of Service Projects
 - Capacity Projects



Likelihood of Failure

Likelihood of Failure (LOF) by Category						Olathe
LOF Category	Wt	Negligible = 1	Unlikely = 3	Possible = 5	Likely = 7	Very Likely = 10
Capacity (Hydraulic or Treatment)	30%	Adequate capacity for next 25 years or as designed and/or 200% backup redundancy available.	Adequate capacity for next 10 years or as designed and/or 100% backup redundancy available. Demand strategies are mostly adequate to ensure adequate capacity or are not needed.	Adequate capacity for next 5 years or as designed and/or 50% backup redundancy available.	Currently overloaded under peak conditions 1 - 2 times per year and/or 25% backup redundancy available. Voluntary demand management strategies can only address 50% of potential water shortages.	Chronically overloaded under existing conditions (3 or more times per year) and no backup available.
Structural Condition	30%	Existing infrastructure is in: Good condition	Moderate condition	Fair condition	Poor condition	Deteriorated
Operational Maintenance	20%	Little or no maintenance required to keep operational.	Moderate maintenance required.	Moderate plus maintenance required (between 25 -50% of moderate costs/effort).	Excessive maintenance required (more than 50% of moderate costs/effort).	High level of maintenance required that stretches O&M capability and is costly (more than 100% of moderate costs/effort).
Reliability/ Performance Indicator	20%	No corrective work order events within 12 months.	<2 corrective work order events within 12 months.	2-5 corrective work order events within 12 months.	6-8 corrective work order events within 12 months.	>8 corrective work order events within 12 months.



Likelihood of Failure - Capacity

Likelihood of Failure (LOF) by Category						Olathe
LOF Category	Wt	Negligible = 1	Unlikely = 3	Possible = 5	Likely = 7	Very Likely = 10
Capacity (Hydraulic or Treatment)	100%	Adequate capacity for next 25 years or as designed and/or 200% backup redundancy available.	Adequate capacity for next 10 years or as designed and/or 100% backup redundancy available. Demand strategies are mostly adequate to ensure adequate capacity or are not needed.	Adequate capacity for next 5 years or as designed and/or 50% backup redundancy available.	Currently overloaded under peak conditions 1 - 2 times per year and/or 25% backup redundancy available. Voluntary demand management strategies can only address 50% of potential water shortages.	Chronically overloaded under existing conditions (3 or more times per year) and no backup available.
Structural Condition	0%	Existing Infrastructure is in: Good condition	Moderate condition	Fair condition	Poor condition	Deteriorated
Operational Maintenance	0%	Little or no maintenance required to keep operational.	Moderate maintenance required.	Moderate plus maintenance required (between 25 -50% of moderate costs/effort).	Excessive maintenance required (more than 50% of moderate costs/effort).	High level of maintenance required that stretches O&M capability and is costly (more than 100% of moderate costs/effort).
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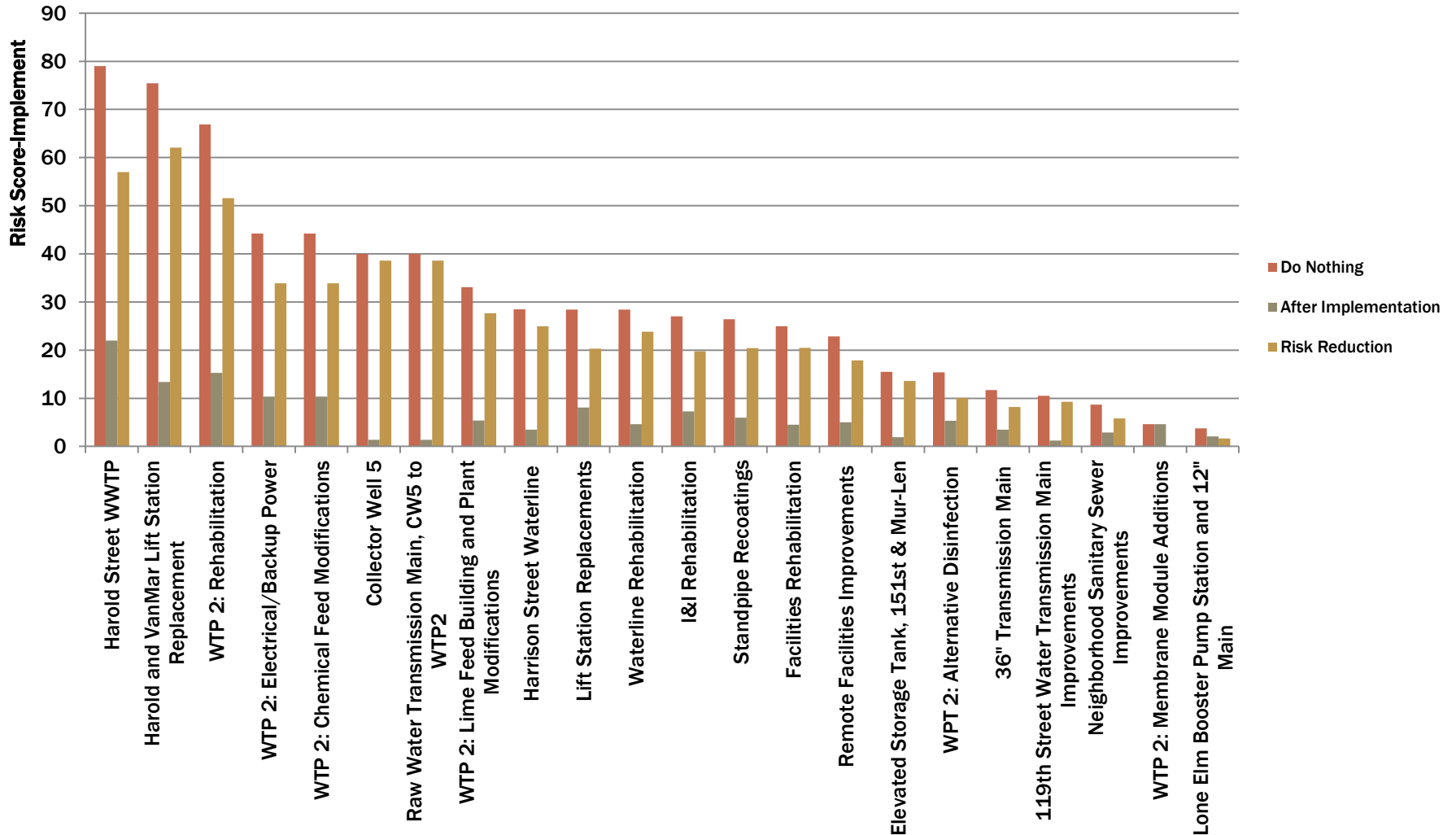


Consequence of Failure

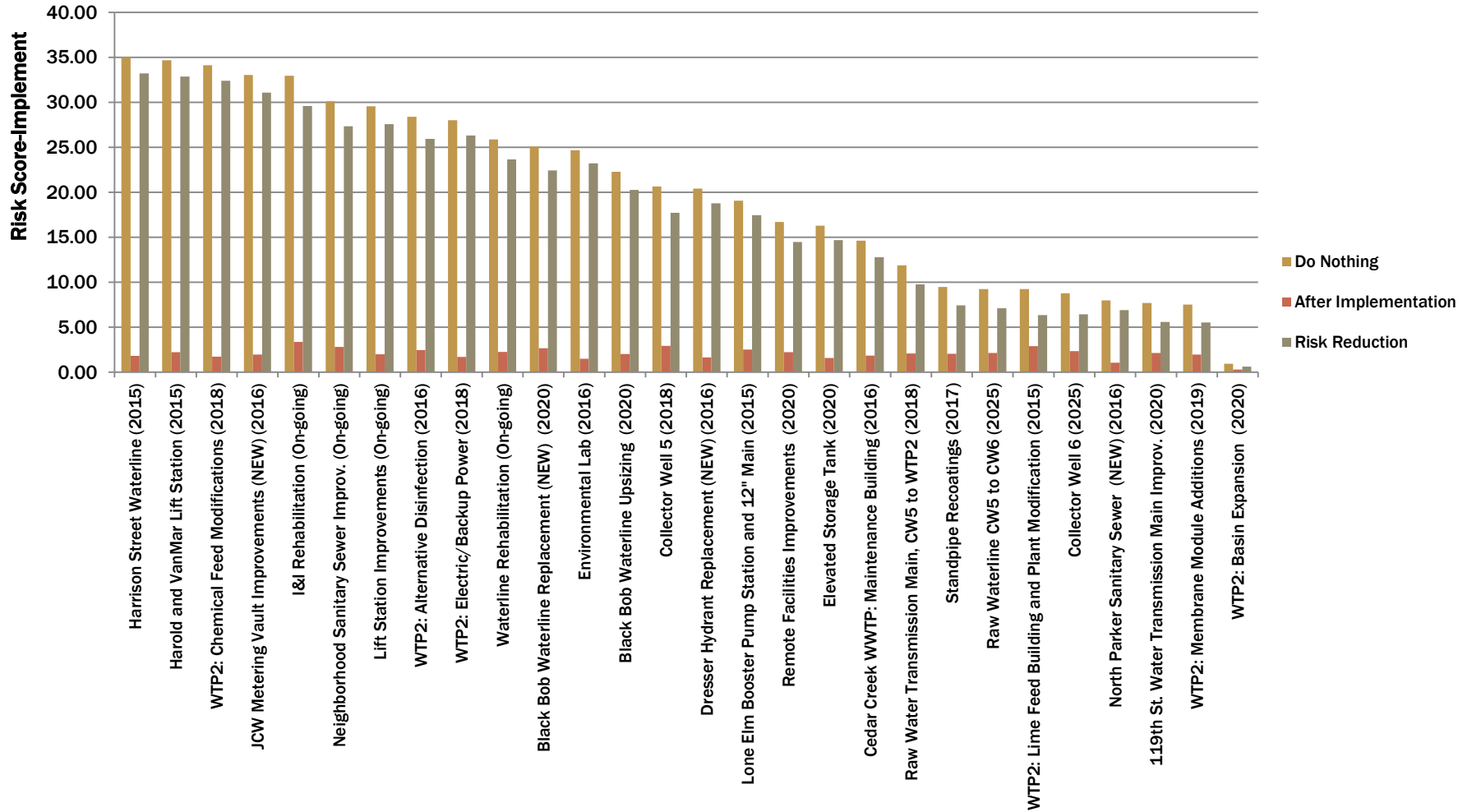
Consequence of Failure (COF) by Level of Service Category				Olathe		
COF Category	Wt.	Negligible = 1	Unlikely = 3	Possible = 5	Likely = 7	Very Likely = 10
Impact on the Safety of Public and Employees	30%	No impact.	Minimal impact.	Moderate impact.	Significant impact.	Significant and immediate impact on injuries or off site health issues.
Impact on Regulatory Compliance	25%	No state or local permit violations. No SSOs.	Notice of Violation (NOV), no enforcement action, fines or surcharge.	Notice of Violation (NOV), regulatory inquiry but fines or surcharge unlikely.	Notice of Violation (NOV), probable enforcement action, but fines or surcharge unlikely.	Notice of Violation (NOV), enforcement action with fines or surcharge.
Impact on Service Delivery	20%	No impact.	Minor impact; conservation messages may need to be emphasized more than usual. System overload will occur once per year with potential for small SSO and number of backups.	Moderate impact; conservation messages may need to be accelerated and some measures, such as volunteer lawn watering bans, may need to be implemented for short periods. System overloads will occur 2 times per year and less than 3 backups.	Major impact; some mandatory water conservation measures need to be implemented; new development permits and new construction restricted until a new source is online. Chronic system overloads - 4 times per year.	Severe impact; major mandatory water conservation measures need to be implemented; new development permits and new construction needs to be placed on hold until a new source is online. Chronic system overloads, large SSO volumes and more than 5 backups.
Impact to Community	15%	No social or economic impact on the community. No reactive media coverage. Any media coverage is a result of proactive announcements by utility. No complaints.	Minor disruption. No adverse media coverage. Some complaints.	Moderate disruption. Some adverse media coverage.	Substantial but short-term disruption. Adverse media coverage due to public impact. Localized media coverage.	Long-term impact. Area-wide disruption. Regional media coverage.
Impact on O&M	10%	No impact on O&M.	Minor impact on O&M (5% increase over typical)	Moderate impact on O&M (10% increase over typical).	Significant increase in O&M (20% increase over typical).	Severe increase in O&M and disruption to other operations needed.



5-year Capital Improvement Projects - Total Risk Score



10-Year Capital Improvement Projects - Total Risk Score



Results

- Developed Standardize Utilities CIP prioritization framework and tools
- Advanced Asset Management principles
- Improved data management and utilization of tools for real results
- Adjusted resource allocation to asset needs
- Delayed \$38.9M in capacity projects
- Maintained signal digit rate increases
- Advanced our analytical expertise
- Improved communication and information sharing between work groups



Next Steps

- Develop AMPs for all major classes of assets in all lines of business
- Develop Management Team team charter that establishes shared values and commitments
- Enhance communication through a Communication Plan and training



Questions?

- ▶ Contact information:
 - ▶ Sarah Doherty
 - ▶ Olathe Public Works, Asset Manager
 - ▶ Sdoherty@olatheks.org
 - ▶ Phone: 913-971-9034

- ▶ Nick Pealy
- ▶ Senior Consultant, CH2MHILL
- ▶ Nick.pealy@ch2m.com
- ▶ Cell: 206-852-9790