# Asset Management at the City of Lethbridge

Presented by: Blair Richter Asset Manager



City of Lethbridge

# Agenda

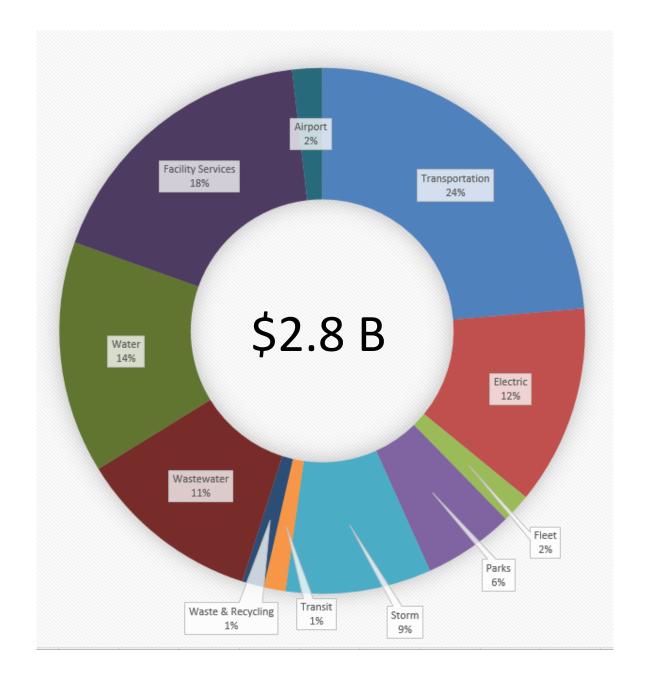
- I) Current Context
- 2) History
- 3) Lessons Learned



#### Current Context

• \$28,065 / citizen

- \$888,888 / square city block
- 31 years remaining (average)
- 14% in critical condition



# Asset Management Team

#### Infrastructure Services

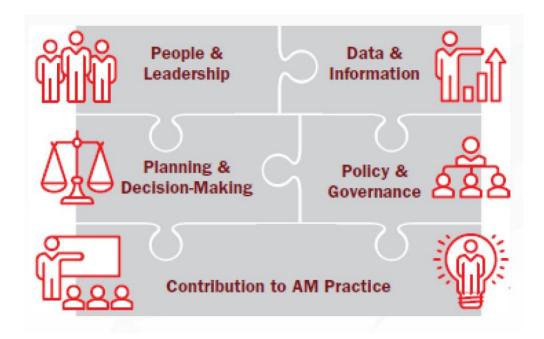
- Asset Management
- Electric
- Electric Operations
- Fleet Services
- Parks Management
- Public Operations
- Transportation
- Urban Construction
- Utility Services
- Waste & Recycling
- Water, Wastewater & Stormwater
- Planning & Development Services
- Customer Services
- Inspection Services

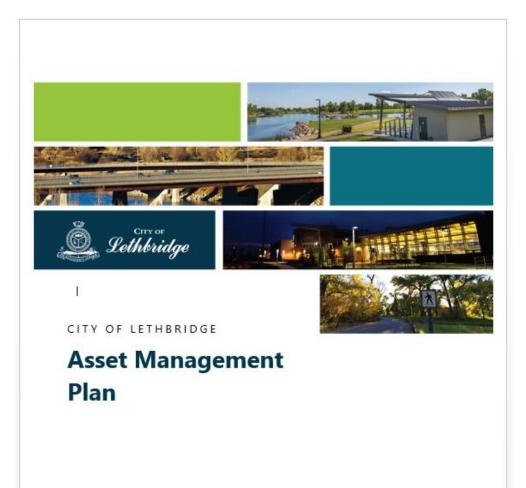
**Blair Richter** Asset Manager Mike McTavish
Asset
Management
Coordinator

Asset
Management
Specialist

Asset
Management
Specialist

# Asset Management





VERSION 1.0 MARCH 2019

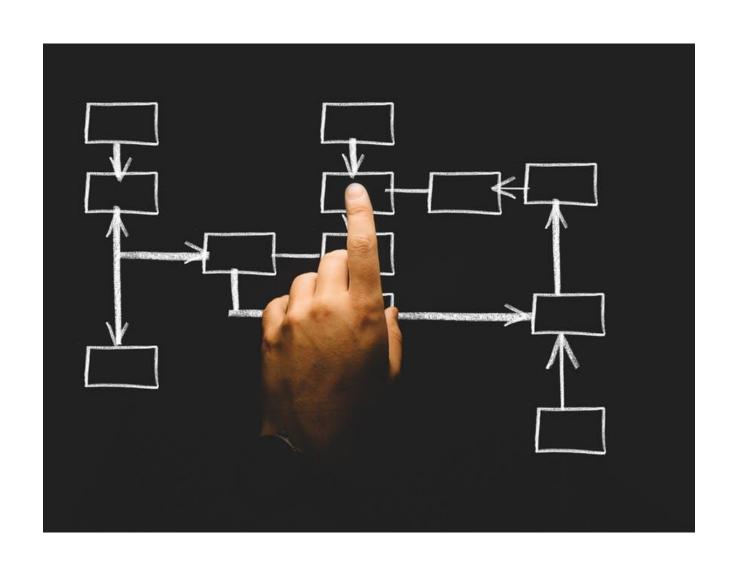
# Project Management



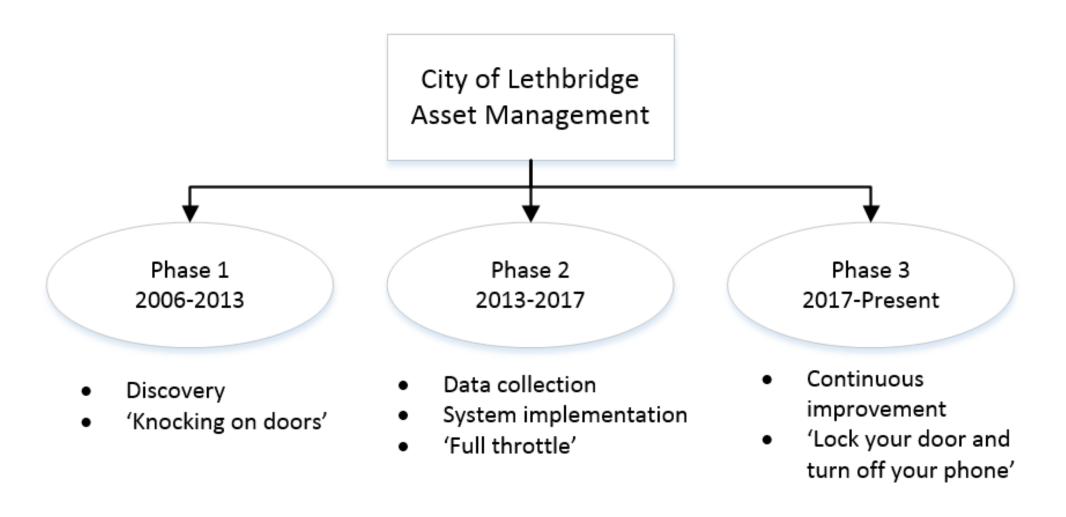
# System Administration



# Business Analysis



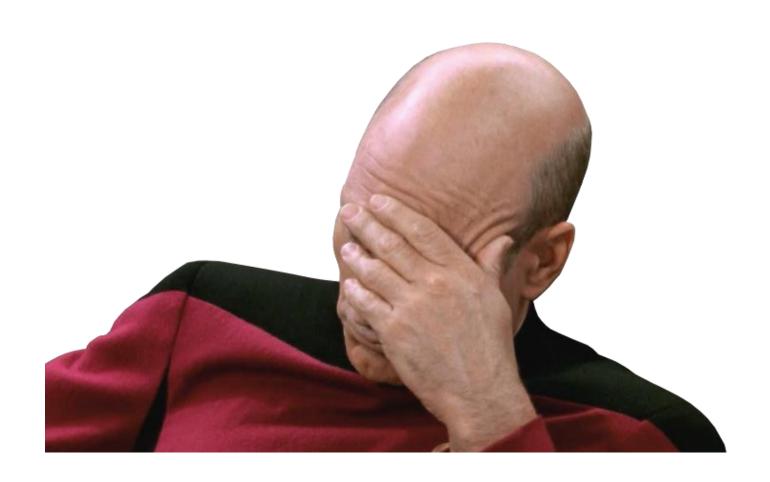
# History



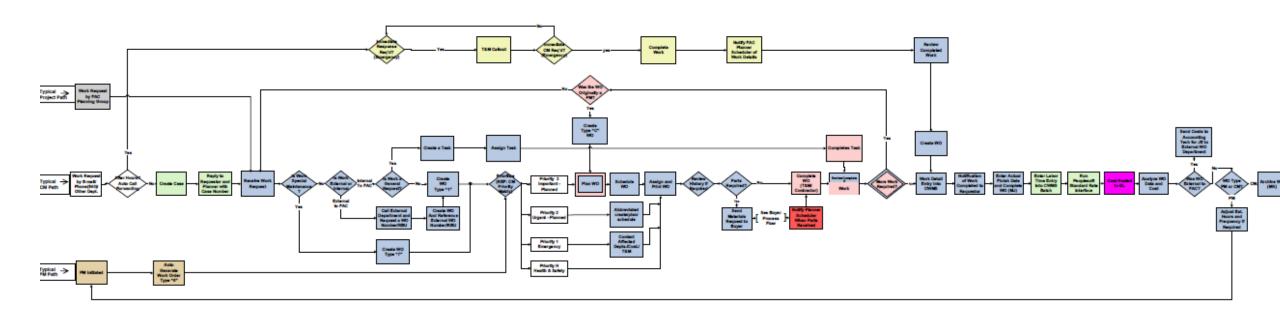
# Phase I - Education



# Building Relationships



#### **Current Processes**



#### **Current Processes**



# JD Edwards

- Asset Management was responsible for:
  - Capital Asset Management (CAM) module
  - Customer Relationship Management (CRM) module





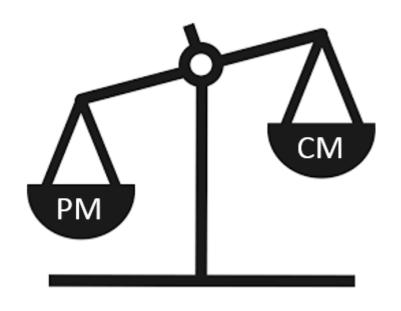
# JD Edwards





# JD Edwards

- Built inventories in JD Edwards
- Created PM schedules



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		Х	Х	Х	Х	Х	Х	X	
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Unit Number	Model WO	EQU	JIP L	)E3C	KIPI	IOIN	3/HI	EKA	RCHY
057 BLDG	10382	Animal Shelter							
057ARCH		Architectural							
057ENVSYS				Building Envelope					
057WINDOW					Windows				
057ROOF					Roo	of			
057CLSYS				Clo	sure	28			
057DRSINT					Inte	Interior Doors			
057DRSEXT	10357				Exterior Doors				
057OHD					Ove	Overhead Doors			
057OHD0001	10335					Ove	rhea	ad Do	oor 1
057OHD0001	10317					Ove	rhea	ad Do	oor 1
057OHD0002	10335					Ove	rhea	ad Do	oor 2
057OHD0002	10317					Ove	rhea	ad Do	oor 2
057MECH			Me	chai	nical				
057HVACSYS				HV.	AC				
057DUCTING						Duc	ting		
057DCT0001						Ducting Fresh Air Intake		h Air Intake	
057RFG					Air Conditioners				
057RFG0001	10342					Air Conditioner 1			
057RFG0001	10326					Air Conditioner 1			
057RFG0001	10347					Air Conditioner 1			

#### Strategy

- Overall Strategic Planning
- Asset & Customer LOS
- Corporate LOS
- People Skills
- Technology Planning
- Business Process Mapping
- Future Trends
- Asset Management Plan
- Legal & Regulatory

Assets

- Asset Registry
- Asset Knowledge
- Data Maintenance
- Business Applications
- Technology System Integration
- Asset Investment Plans
- Risk Framework

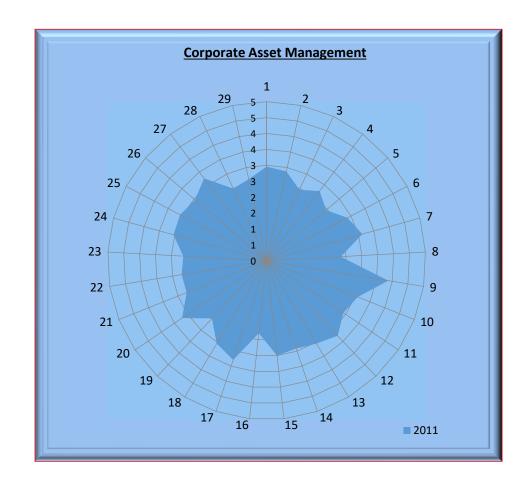
#### People Effectiveness

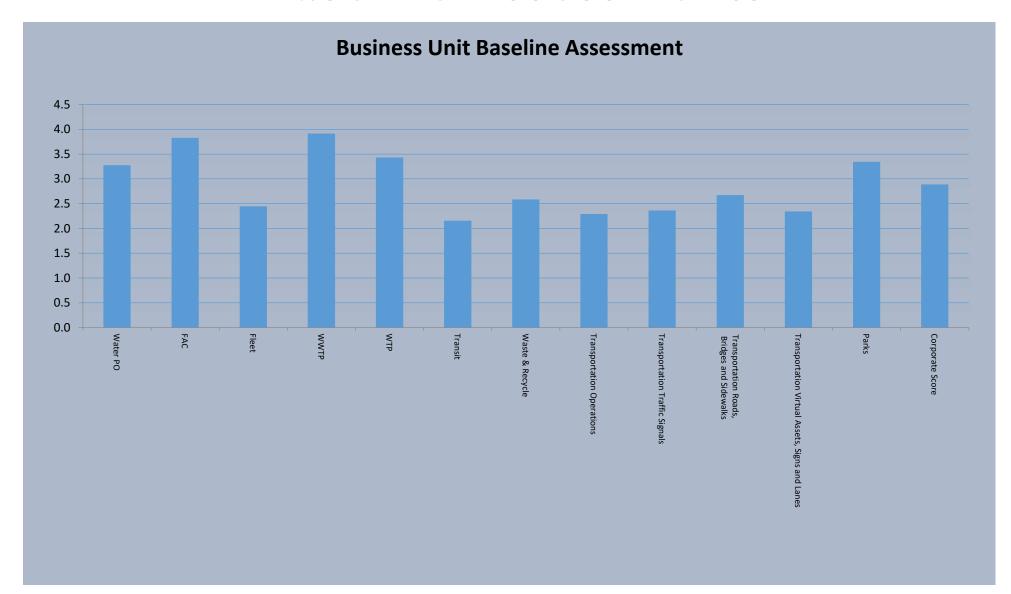
- Asset Management Leadership
- Roles & Responsibilities
- Learning and Development
- Communication and Information Sharing
- Continuous Improvement
- Knowledge Retention and Succession Planning

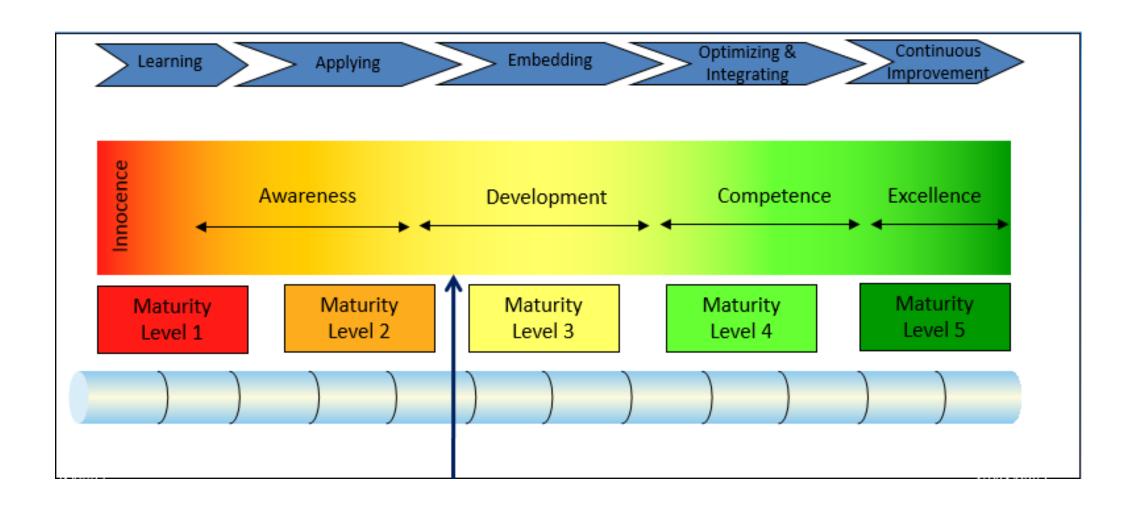
#### **Business Processes**

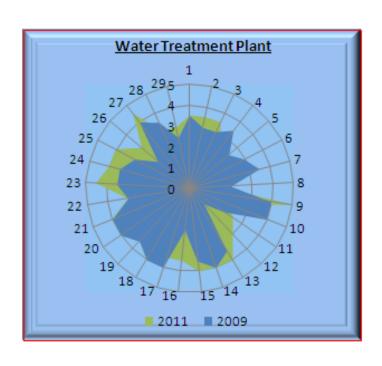
- Capital Projects
- Operations Management
- Maintenance Management
- Materials Management
- Financial
- Asset Process Flow
- Asset Management QA

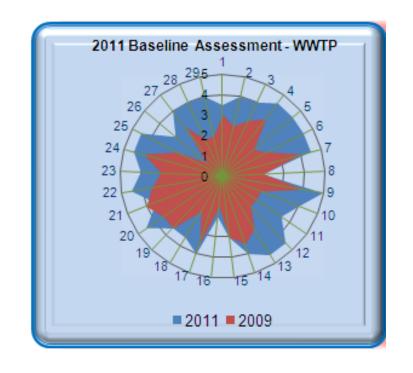
Item #	Asset Management Focus Area	Corporate Score 20		
	Strategy			
Q1	Overall Strategic Planning	3.0		
Q2	Asset & Customer Levels of Service	2.9		
Q3	Corporate LOS & Targets	2.5		
Q4	People Skills & Competencies Master Planning	2.8		
Q5	Technology Assets Planning	2.5		
Q6	Business Process Mapping	2.9		
Q7	Future trends (Impact of growth)	3.1		
Q8	Asset Management Plan and Master Plans	2.3		
Q9	Legal, Regulatory & Statutory Requirements	3.9		
	Assets			
Q10	Asset Registry	3.1		
Q11	Asset knowledge	2.9		
Q12	Data Maintenance	3.3		
Q13	Business applications	3.0		
Q14	Technology Systems Integration	2.9		
Q15	Asset Investment Plans (AIP)	3.0		
Q16	Risk Framework - BU level and Asset level	2.3		
	People Effectiveness			
Q17	Asset Management Leadership & Governance	3.3		
Q18	Roles & Responsibility	3.0		
Q19	Learning and Development	2.5		
Q20	Communication and Information sharing	3.2		
Q21	Continuous improvement culture (sustainability)	2.7		
Q22	Knowledge retention & Succession planning	2.7		
	Business Processes	<u>'</u>		
Q23	Capital projects - Planning, design & construction	2.6		
Q24	Operations Management	3.0		
Q25	Maintenance Management	3.1		
Q26	Materials Management	3.0		
Q27	Financial	3.3		
Q28	Asset Process Flow	2.5		
Q29	Asset Management Quality Assurance	2.6		
	Corporate Average Score	2.9		

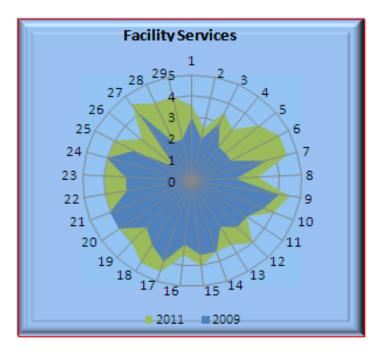




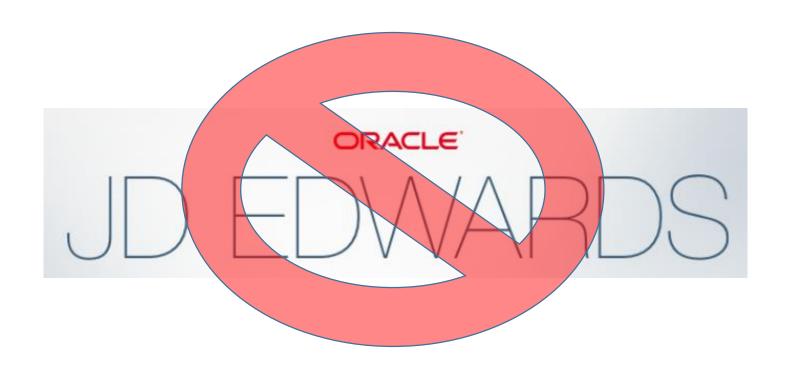








## Re-Evaluate



#### Phase 2

New Leadership
New Vision
New Opportunities

# GIS



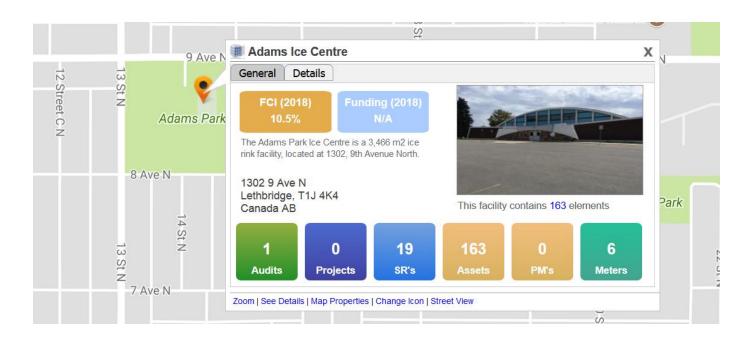


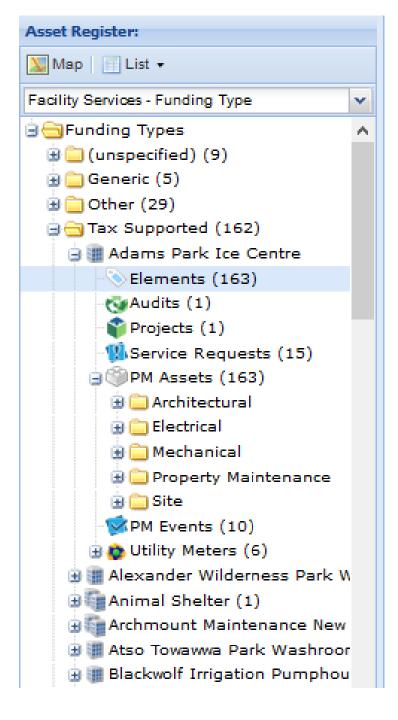
### GIS

- Increased staff
  - Term employees
  - Summer students
  - Modified duties employees



- In 2013 Asset Planner was implemented for Facility Services
- City building and equipment inventory

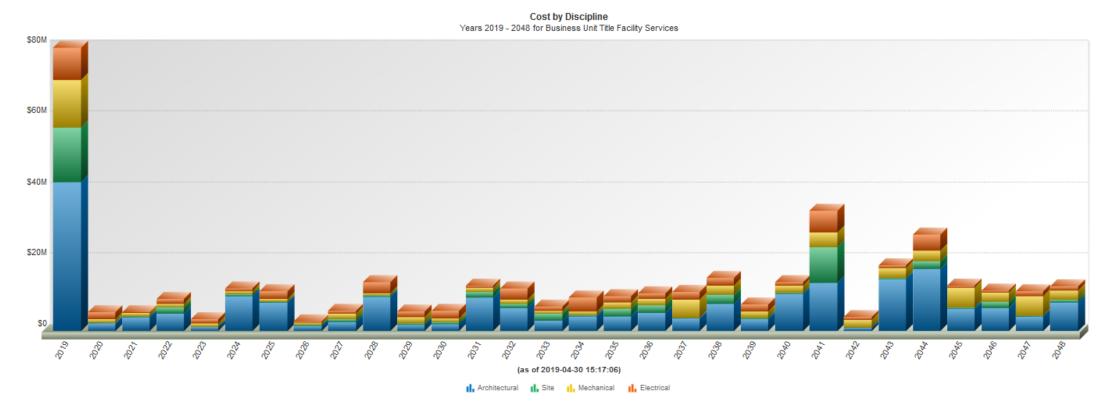




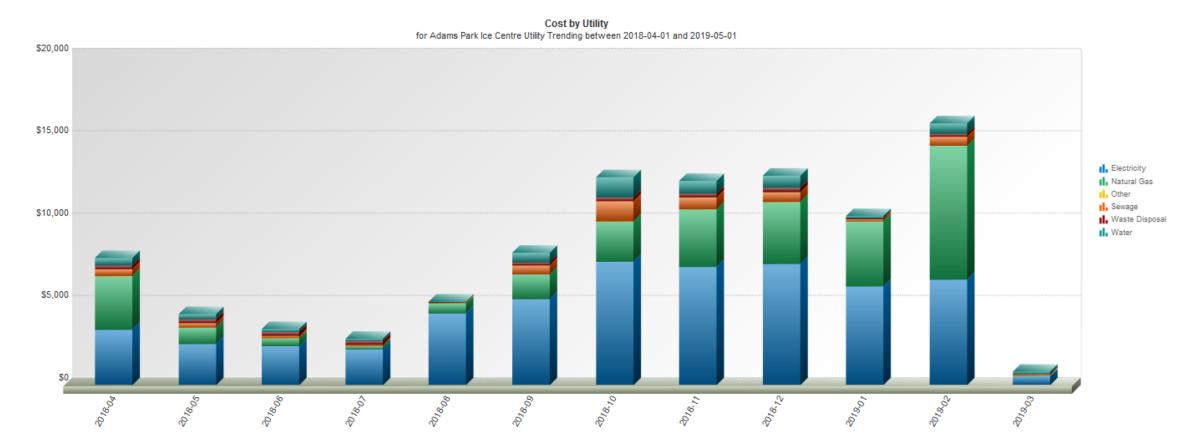
- Service Requests
- Work Orders



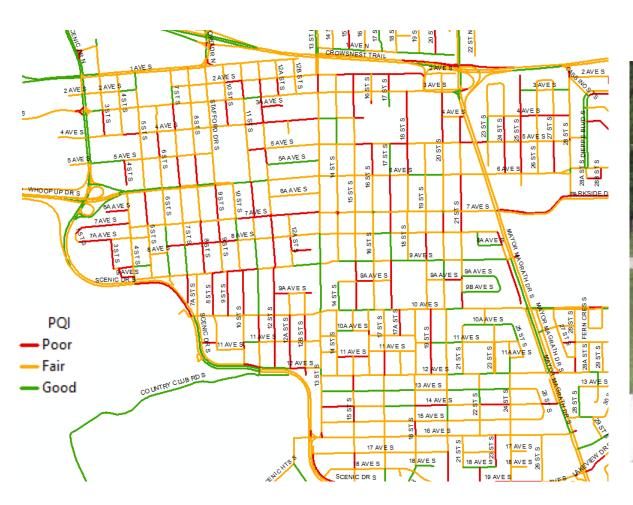
- Building audits
- Lifecycle modeling



• Module to monitor energy consumption



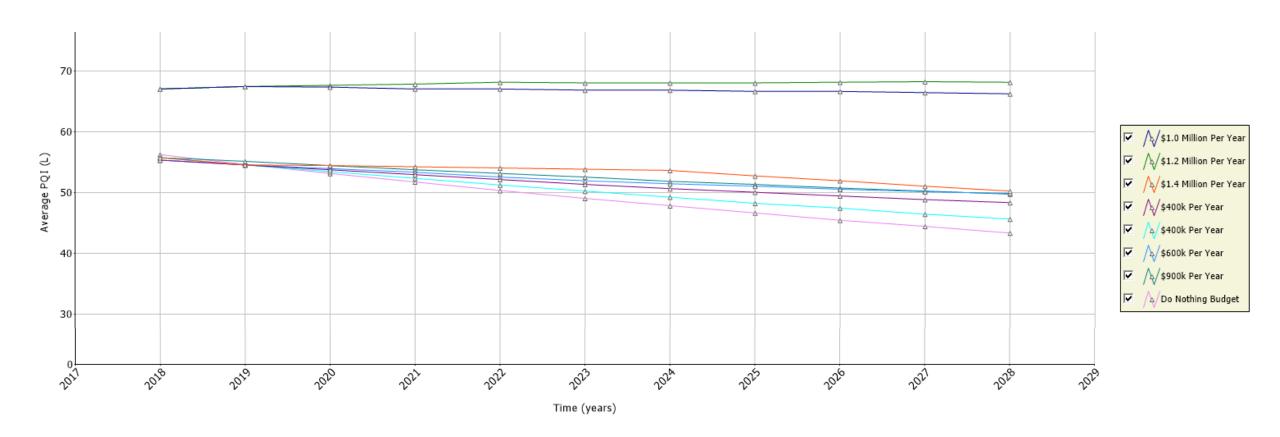
## RoadMatrix





#### RoadMatrix

• Supports decision making for annual overlay program and budgeting



## Cityworks

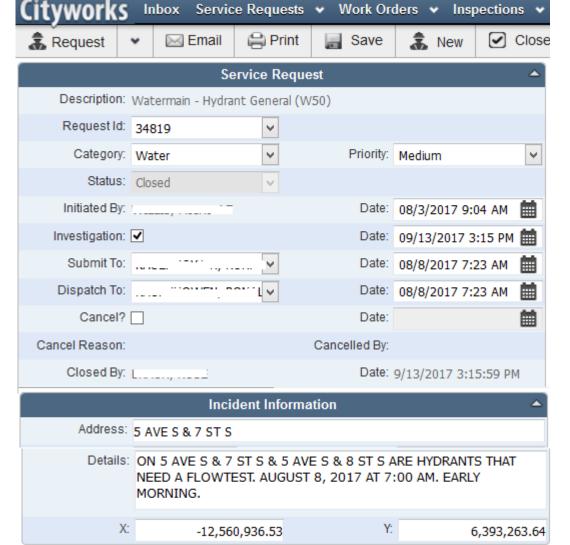


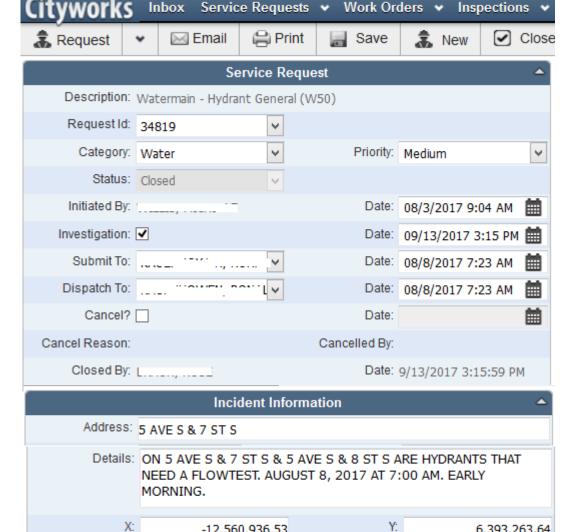
# Cityworks

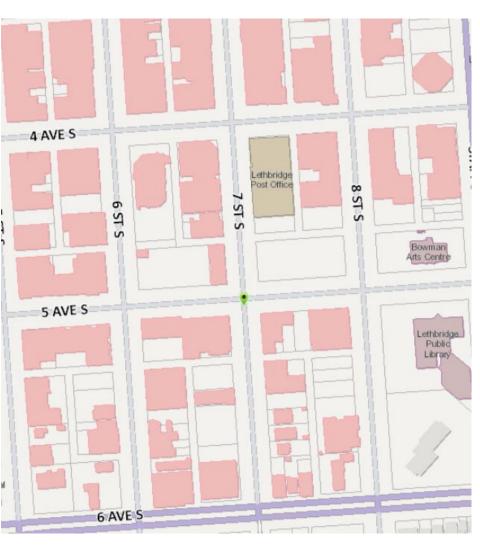




# Cityworks – Service Requests

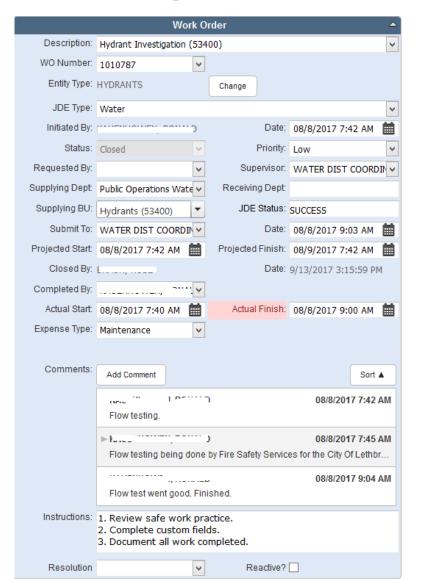


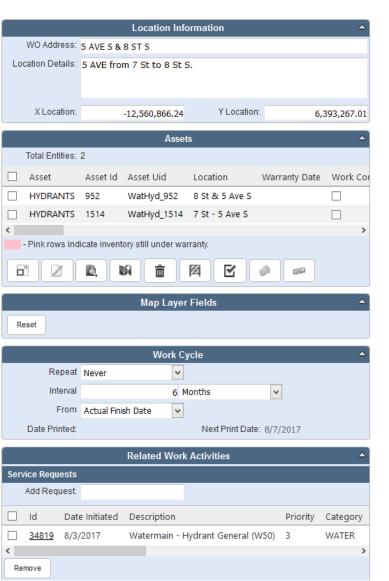


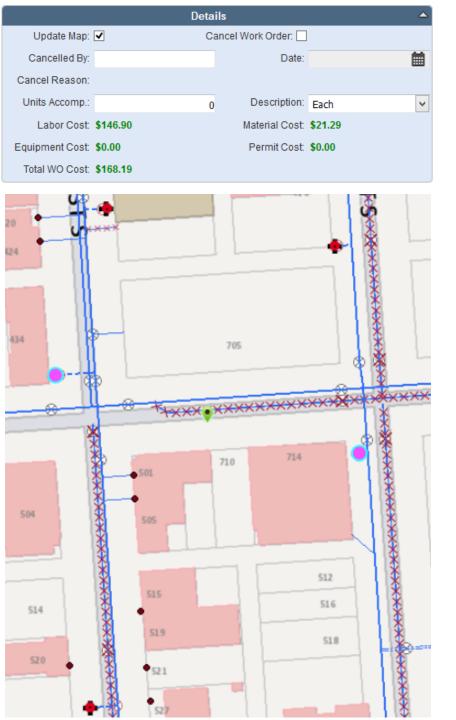




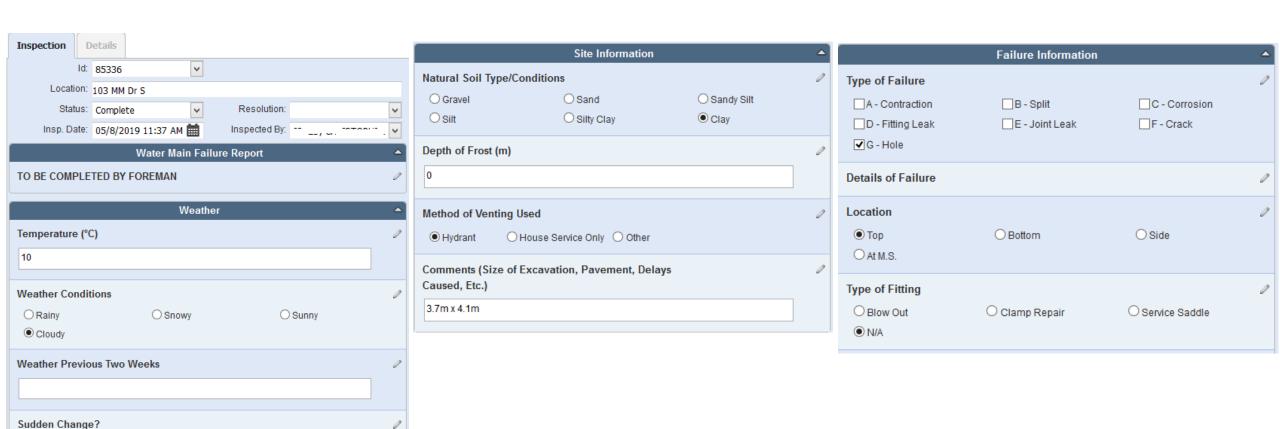
# Cityworks – Work Orders







# Cityworks - Inspections



○ YES

NO

## Cityworks – Asset Analytics

			ı	Asset Summary					^
Entity Type	Uid	Total Cost	Total Labor	Maintenance	Date	Condition	Date		
HYDRANTS	WatHyd_1514	\$21,150.78	158.01156	16	01/15/2019	0	10/09/2018	Po	^
HYDRANTS	WatHyd_952	\$17,342.47	123.38656	34	01/15/2019	0	10/09/2018	m <sub>b</sub>	v
Totals:		\$38,493.25	281.39812						

Work Orders	Inspections	Cost I	History	GIS Attri	butes	Condition	
Id	Description		Status		Created	i	Closed
1018237	Hydrant Ser Summer (53	_	IP		04/12/2	019	
1015752	Hydrant Ser Winter (534	_	CLOSED	)	09/27/2	018	04/16/2019
1012837	Hydrant Ser Summer (5	_	CLOSED	)	02/02/2	018	04/12/2019
1012703	2018 Water Program	main	CLOSE	)	01/22/2	018	04/15/2019
1011729	Hydrant Ser Winter (534	_	CLOSED	)	10/24/2	017	09/27/2018
1010787	Hydrant Investigation (53400)	n	CLOSED	)	08/08/2	017	09/13/2017
	Hydrant Hit	& Run					

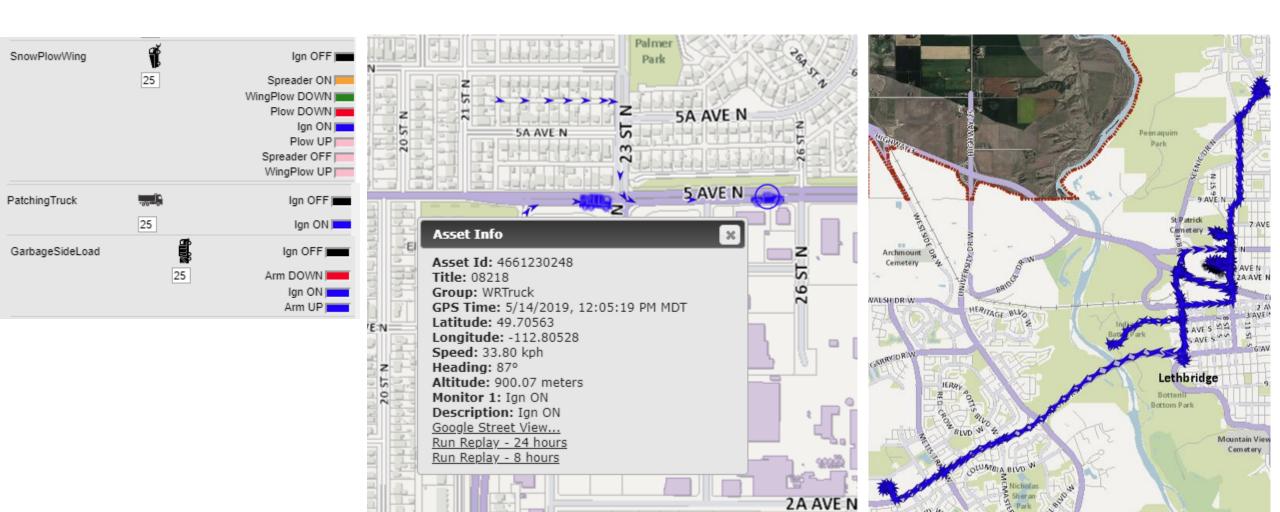
Work Orders	Inspections	Cost History	GIS Attributes	Condition
ld	Descrip	tion	Status	Created
79444	Hydrant Summe		OPEN	04/12/2019
53731	Hydrant Winter	Inspection -	COMPLETE	09/27/2018
24228	Hydrant Summe		CANCEL	02/02/2018
19881	Hydrant Winter	Inspection -	COMPLETE	10/24/2017

# Cityworks – Asset Analytics

			ı	Asset Summary					^
Entity Type	Uid	Total Cost	Total Labor	Maintenance	Date	Condition	Date		
HYDRANTS	WatHyd_1514	\$21,150.78	158.01156	16	01/15/2019	0	10/09/2018	Po	^
HYDRANTS	WatHyd_952	\$17,342.47	123.38656	34	01/15/2019	0	10/09/2018	m <sub>&gt;</sub>	Ų
Totals:		\$38,493.25	281.39812						

(																	
Work Orders	Inspections	Cost History	GIS Attribu	ıtes Conditi	ion				Work Orders	Inspections	Cost History	GIS Attributes	Condition				
Id	Category	Activity Type	Start Date	Close Date	Total Hours	Labor	Material	Equip.	125 —							50	12.5
1001133	WATER	Hydrant Servicing - Winter (53400)	03/03/2015	03/23/2015	0.50936	\$17.80	\$0.00	\$6.11	100 —							40	Mainten
1003656	WATER	Hydrant Servicing - Winter (53400)	11/09/2015	03/17/2016	0.86885	\$32.36	\$1.21	\$10.54	Condition Sco				•			30 30 20 20	7.5 ance Score Incr
1005525	WATER	Hydrant Servicing - Summer (53400)	05/02/2016	10/13/2016	1.03587	\$39.16	\$3.87	\$1.91	25		_					10	2.5 e
1007428	WATER	Hydrant Servicing - Winter	10/11/2016	01/16/2017	0.77754	\$33.29	\$4.34	\$4.99		Jul '15	Jan <sup>'</sup> 16 Jul <sup>'</sup>	'16 Jan '17  → Conditio → Maintena		Jan <sup>'</sup> 18	Jul '18	Jan '19	
					123.38656	\$5,752.24	\$7,860.78	\$3,729.45				Maintena	ance Score In	crease			

## **AVL**

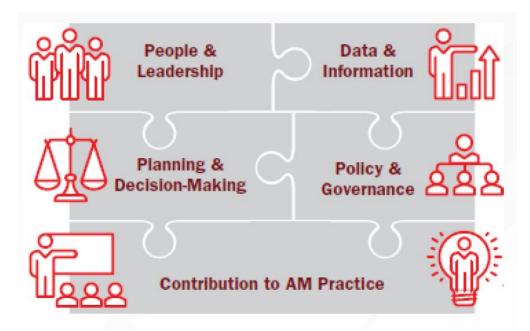


## Question

• In terms of CNAM's AM competencies, what are you currently struggling with the most?

• Go to www.menti.com

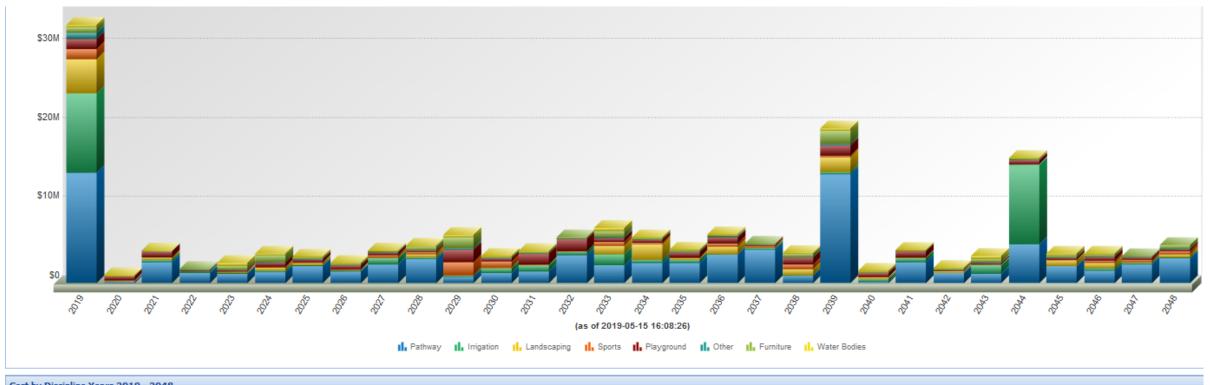
• Enter code 51 87 94



### Phase 3

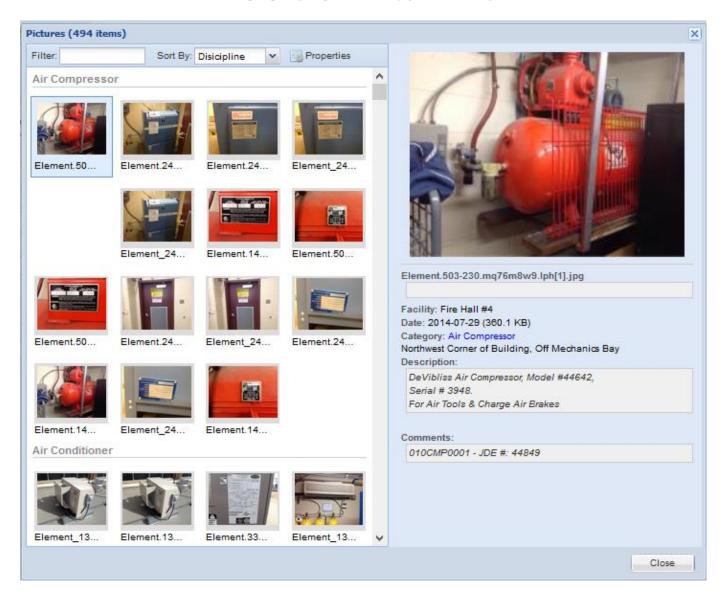
- Data improvements
  - Reduce gaps
  - Data confidence
  - Data standardization
- System improvements
  - Mobile
  - Streamline procedures
- Different projects & opportunities

## Asset Planner



Cost by Disc	ipline Years 2	2019 - 20	48																				
Discipline	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	204
Pathway	\$13,973,706	\$260,958	\$2,711,829	\$1,277,195	\$1,180,776	\$1,421,108	\$2,163,163	\$1,481,191	\$2,350,108	\$3,050,505	\$813,125	1,296,937	\$1,510,947	\$3,579,522	\$2,266,277	\$2,635,073	\$2,616,762	\$3,680,519	\$4,237,679	\$1,003,856	\$13,794,247	\$198,040	\$2,675
Irrigation	\$10,054,696	\$0	\$270,416	\$122,832	\$148,576	\$158,073	\$157,421	\$123,454	\$807,051	\$254,428	\$166,136	\$616,740	\$773,540	\$461,168	\$1,403,131	\$318,657	\$367,684	\$33,994	\$200,560	\$8,767	\$344,921	\$360,976	\$481
Landscaping	\$4,365,844	\$43,728	\$342,790	\$94,229	\$127,126	\$390,212	\$302,642	\$71,632	\$109,138	\$319,382	\$23,596	\$114,527	\$34,744	\$6,378	\$1,042,122	\$2,000,814	\$173,778	\$971,811	\$97,101	\$818,130	\$1,794,540	\$187,740	\$158
Sports	\$1,306,118	\$120,686	\$0	\$0	\$20,808	\$156,060	\$105,080	\$107,161	\$340,627	\$351,551	\$1,638,734	\$744,094	\$55,141	\$31,212	\$523,217	\$234,090	\$78,488	\$319,663	\$174,756	\$550,684	\$289,647	\$57,222	1
Playground	\$1,248,480	\$520,200	\$728,280	\$104,040	\$208,080	\$520,200	\$312,120	\$520,200	\$312,120	\$208,080	\$1,664,640	\$416,160	\$1,378,530	\$1,529,388	\$520,200	\$338,130	\$691,866	\$806,310	\$208,080	\$868,734	\$1,248,480	\$520,200	\$728
Other	\$760,343	\$832	\$2,493	\$141,471	\$25,386	\$4,994	\$2,081	\$6,867	\$832	\$4,682	\$151,482	\$832	\$45,465	\$70,083	\$117,915	\$9,676	\$34,100	\$87,019	\$1,956	\$45,502	\$177,275	\$28,463	4
Furniture	\$749,038	\$2,445	\$32,981	\$34,905	\$476,555	\$970,745	\$222,386	\$192,266	\$166,568	\$476,659	\$1,423,007	\$225,923	\$230,865	\$136,032	\$752,365	\$238,408	\$162,146	\$177,492	\$32,148	\$453,354	\$1,669,270	\$109,086	\$108
Water Bodies	\$213,282	\$98,838	\$5,202	\$0	\$400,554	\$166,464	\$130,050	\$119,646	\$31,212	\$46,818	\$213,282	\$98,838	\$20,808	\$0	\$353,738	\$104,040	\$130,050	\$88,434	\$0	\$46,818	\$275,706	\$98,838	\$36

### Asset Planner

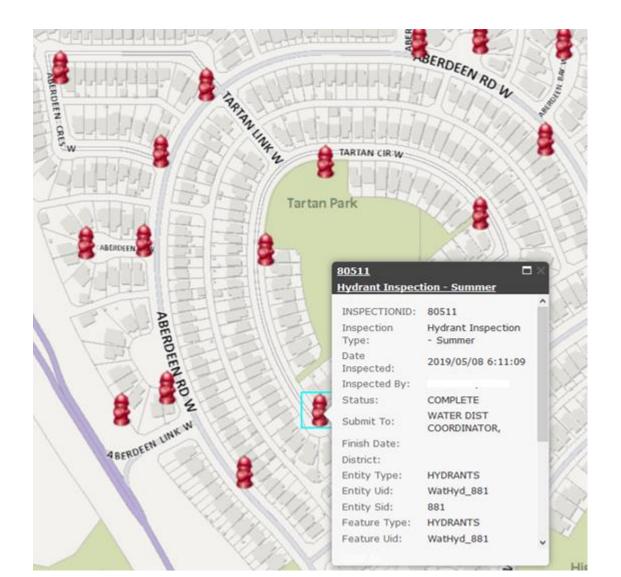




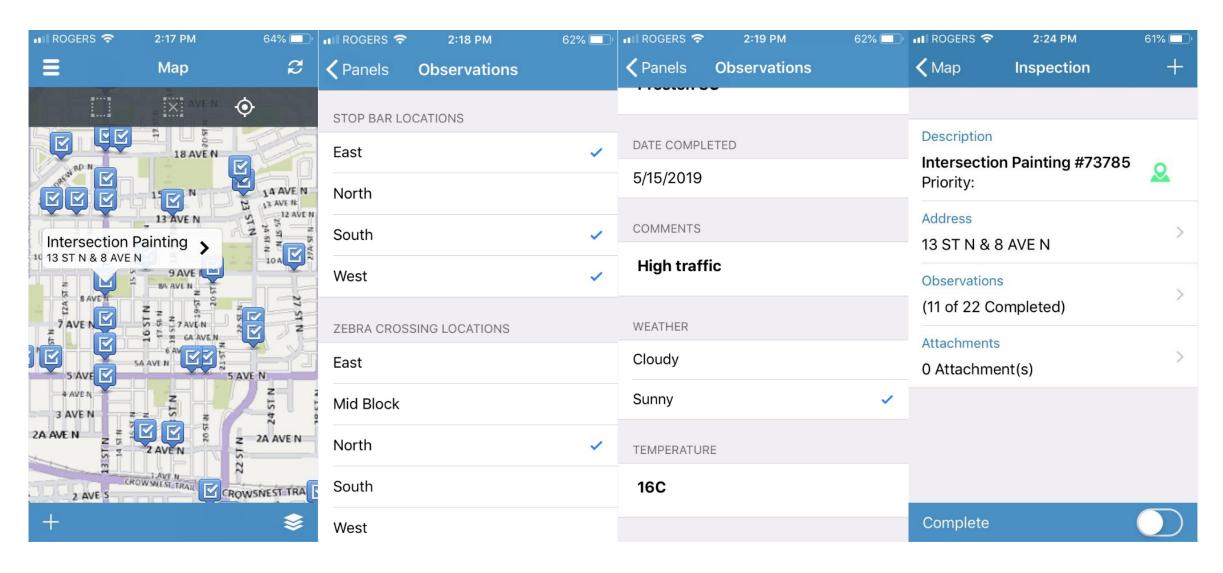








Cityworl	(S	Inbox	Service	Requests	٠	Work Orde	ers 🕶	Inspec	tions	•
Inspection				Print	t	Save	•	Close	â	Т
Inspection	D	etails								
	ld:	80511		<b>~</b>						
Locati	on:	351 Tarta	n Circle W							
State	us:	Complete		~		Resolution:				•
Insp. Da	ate:	05/8/201	9 12:11 P	м 🛗	In	spected By:		,	•	4
		Ch	eck for L	eak by Sou	ınc	l Testing			4	<u> </u>
Can you hea	ır a	leak?								1
○Yes		● No								
Comment										0
			V	later Barre	el				4	<u> </u>
Level of wat	er i	n barrel								1
Does water i	nee	d to be n	umped fr	om barrel	of					0
hydrant?		- 10 до р			-					
○Yes		● No								
Turbidity										0
4.07										
				bservation					*	
IF EXTRA WO	ORI	K REQUIR	ED, CRE	ATE SERVI	CE				,	

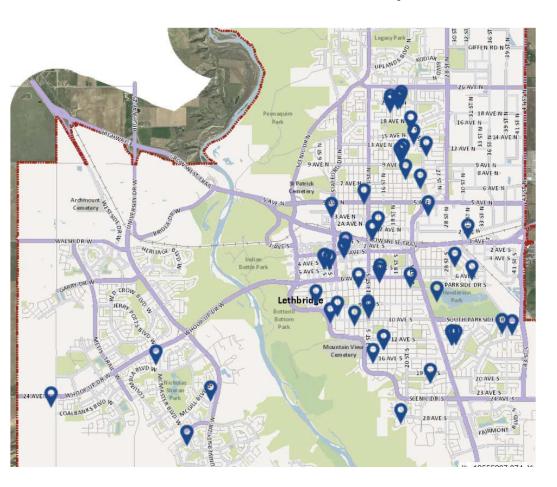


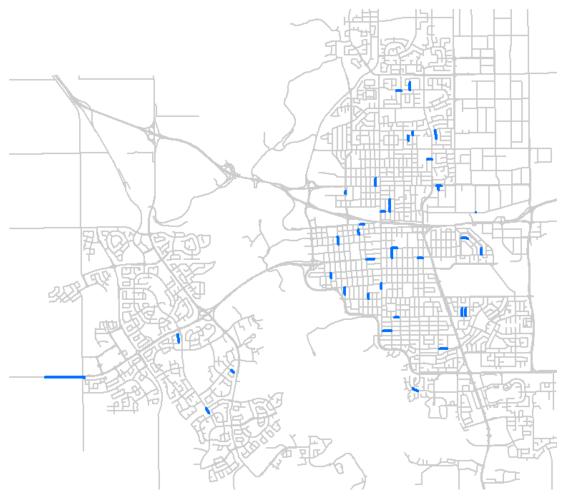


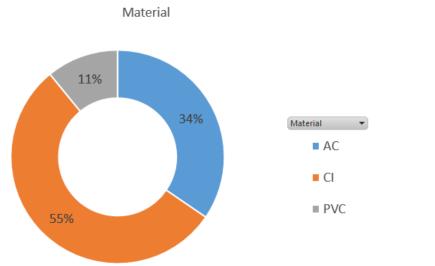


Cityworks	Inbo	x Service	Requests	✓ Work Orde	ers 🕶 Inspec	ctions 🗸
Inspection	*		Print	Save	<b>⊘</b> Close	â
Inspection	Details					
Id	27768	1	~			
Location	50 1 av	/e s				
Status	Compl	ete	~	Resolution:		~
Insp. Date	05/28	/2018 11:42	AI 🏥 IA	Inspected By:		~
		Tree	Data Collect	tion		۵
Diameter (DBH	cm)					0
28						
Height (m)						0
18						
Spread (m)						0
3						
Circumference	(cm)					0
Comments						0

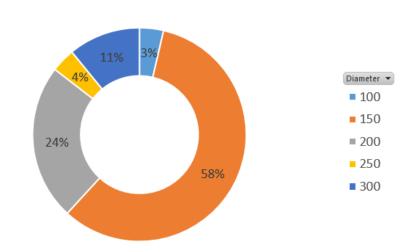
• 54 Water Main Repairs last winter



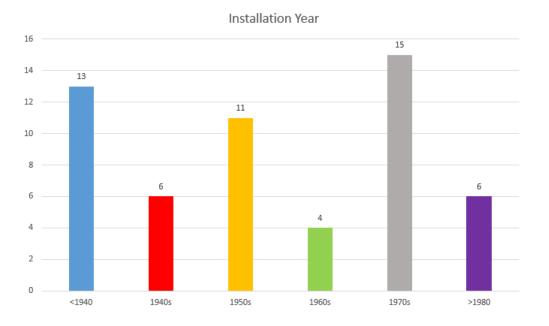


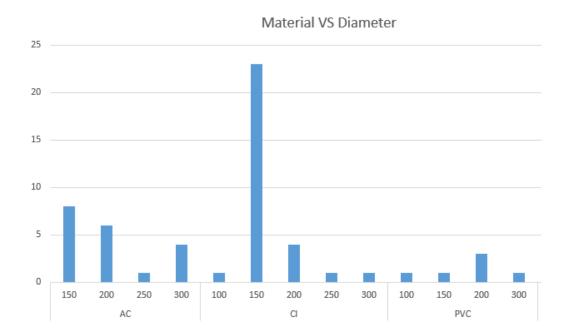


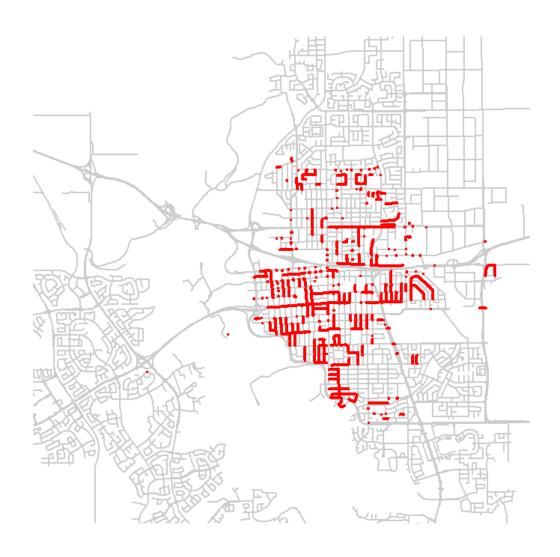




Diameter

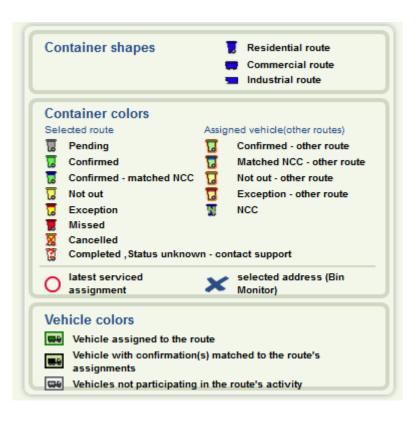






### **Fleetmind**

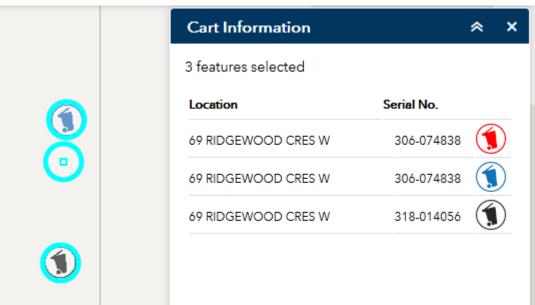


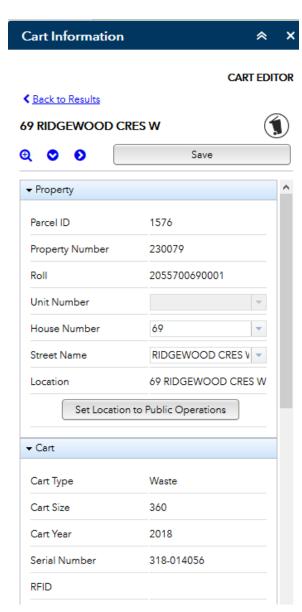


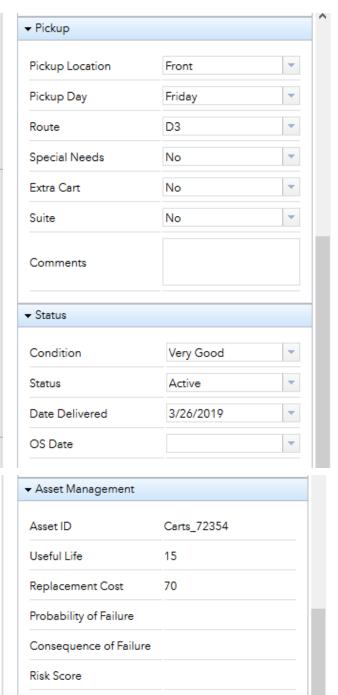


## Cart App

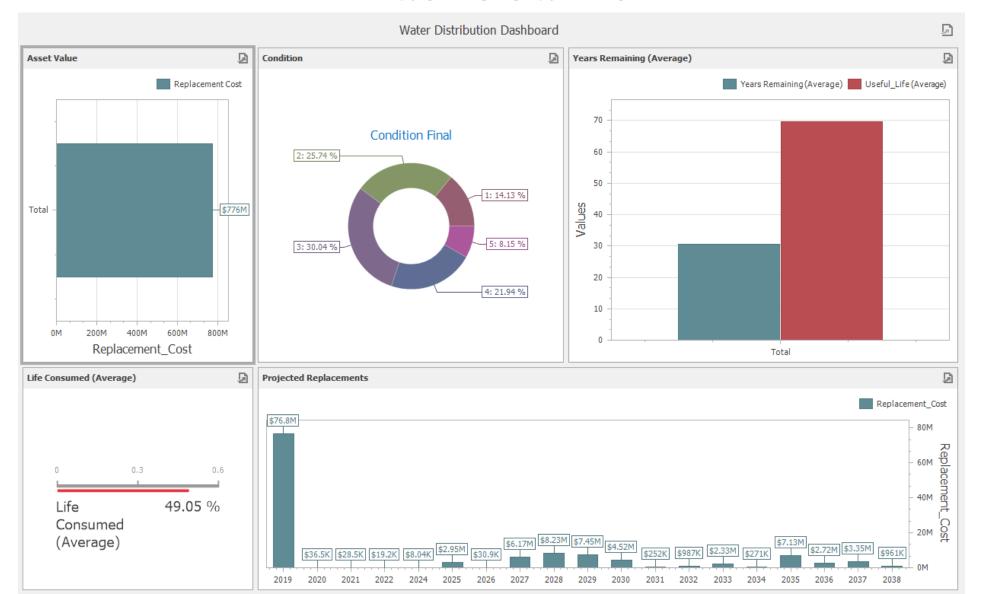








## **Dashboards**



- Data & Information
  - Capture the information you know
  - Standardize your data
  - Provide reports and dashboards

Building	Building ID	Building Name	Туре	Tax Owned	Install Date	Expected Life	Replacement Cost	Condition
Road	Segment ID	Segment Name	Туре	Road Class	Install Date	Expected Life	Replacement Cost	Condition
Park	Park ID	Park Name	Neighborhood	Size	Install Date	Expected Life	Replacement Cost	Condition
Pipe	Pipe ID	Pipe Name	Material	Diameter	Install Date	Expected Life	Replacement Cost	Condition

- Policy & Governance
  - Look at other municipalities
  - Determine what is important and essential to your organization
  - FCM is a great resource

#### Asset Management Policy





#### BACKGROUND

The City of Lethbridge ("The City") has a large and diverse portfolio of infrastructure assets that serve the community. The City intends to provide and maintain these assets in a safe and responsible manner while considering the social, environmental and financial implications to our citizens. There is a financial responsibility to meet desired service levels in the most cost effective and sustainable way.

Therefore, the City intends to take a formal approach in the management of its infrastructure assets by investing at the most optimal times in order to maximize the life of our assets. The City is committed to creating, implementing and evaluating our asset management program to protect our assets and better

The purpose of this policy is to provide leadership and set guidelines for implementing consistent asset management processes throughout the Organization.

This policy applies to Business Unit Managers, Business Unit Employees, Financial Services, Directors and Asset Management

#### POLICY STATEMENT

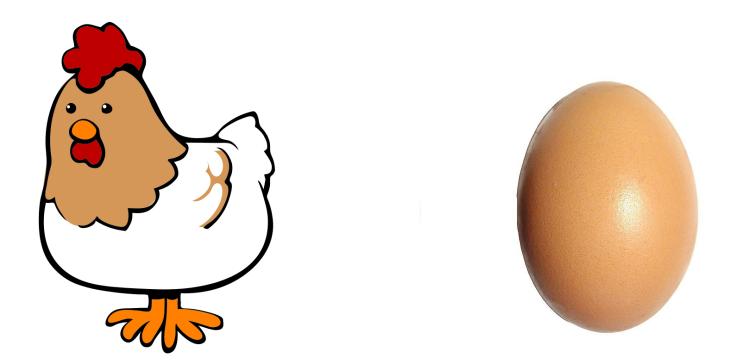
To ensure adequate provision is made for the long-term operation, maintenance, replacement and disposal of major assets by:

- . Ensuring that services and infrastructure are provided in a financially sustainable manner, with the appropriate levels of service to customers and the environment
- · Implementing suitable asset management strategies and adequate financial resources towards our assets
- . Creating an environment where all employees take an integral part in overall management of infrastructure assets by creating and sustaining an asset management awareness throughout the Organization by training and development
- · Meeting any legislative and regulatory requirements for asset management
- · Ensuring resources and operational capabilities are identified and responsibility for asset
- . Demonstrating transparent and responsible asset management processes that align with
- · Provide cost effective and efficient services that meet required service levels (as approved by City Council through both Operating budget and CIP budget)

- People & Relationships
  - Try and the right people on your team or on your side
  - Go out of your way to help someone
  - Build trust



- Software & Procedures
  - Don't be in a panic to get software
  - Don't wait until your processes are perfect to get software



- Change Management
  - Try to understand their processes and their reasoning
  - Change the way they think about their work



## Questions?



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