



General Issues Committee
November 18, 2016
Item 5.3



Public Works
Hamilton Water

2017 Operating and Capital Budget

November 18, 2016

Providing services that bring our City to life!

Program Overview



Hamilton Water – 2017 Rate Budget Presentation

Presentation Overview

1. Program Overview
2. Planning & Capital Review
3. Operations Review
4. Compliance & Regulations Review
5. Woodward Upgrades & Biosolids Update
6. Director's Overview
7. Staffing and Resources
8. Cost Categories, Revenues and Reserves





Program Overview

- Workforce of 300 dedicated and professional staff in 9 sectional teams
- Serves 490,000 residents and Commercial/Industrial businesses in Hamilton
- \$10.07 billion in infrastructure (replacement value 2016)
- Operates 140 different facilities, many of them 24 hours per day, 365 days per year
- Infrastructure renewal and level of service supported by multi-year business plan
- Program is 100% rate-supported and no reliance on the property tax base to support Hamilton Water operating and capital budgets



Main Pump House



Low Lift Pumping Station

Inventory of Assets

Water \$3.22 Billion

- 1 water treatment plant
- 23 storage facilities
- 2,090 km of mains
- 21 water pumping stations
- 4 communal systems
- 1 surge tower
- 13,145 hydrants
- 21,672 valves and chambers
- 149,724 water meters



Wastewater \$5.39 Billion

- 2 wastewater treatment plants
- 9 CSO tanks
- 72 pumping stations
- 7 wastewater control gates
- 25,008 maintenance holes
- 1,399 km of sewer lines
- 411 km of interceptors + trunk
- 151,579 sewer laterals

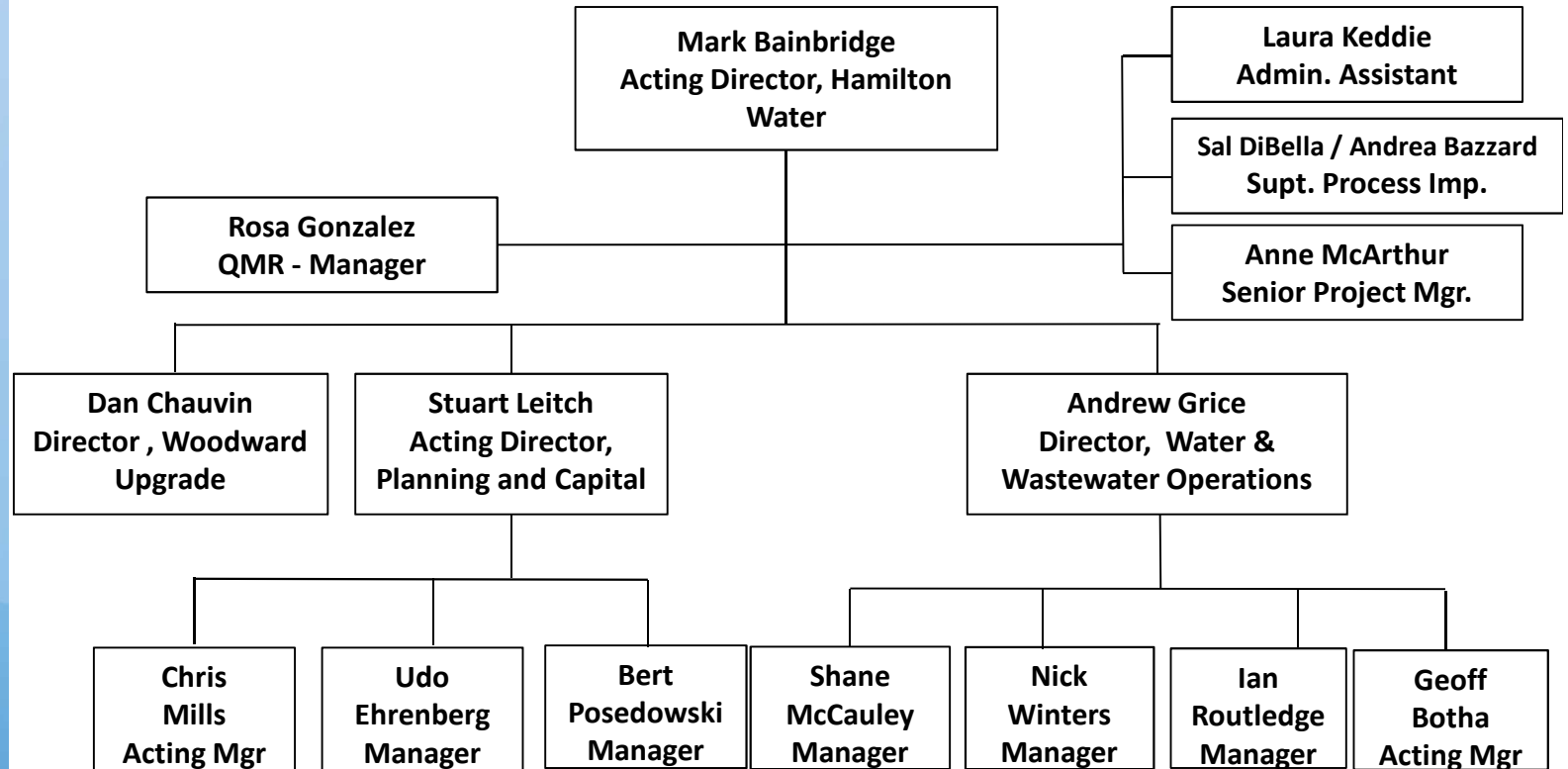


Stormwater Minor/Major Systems \$1.46 Billion

- 1,149 km of storm sewers
- 19,551 manholes
- Capital planning
- Storm water major systems managed by Operations Division



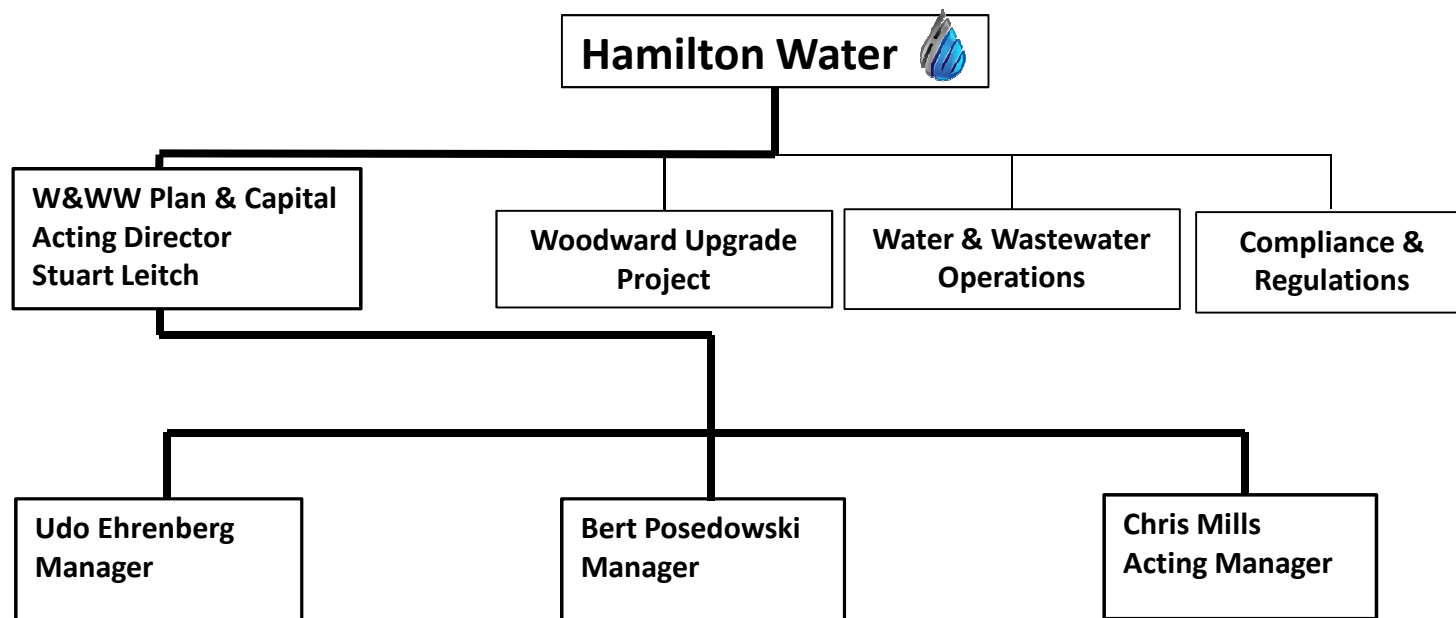
Organizational Chart





Planning & Capital

Planning & Capital Management Team



Infrastructure Planning & Systems Design

Infrastructure Modelling
Urban Development Review
Master Planning
Environmental Assessment
Operational Support

Sustainable Initiatives

Sourcewater Protection
Rural Development Review
W&WW Facility Asset Mgmt
Harbour Remediation
Groundwater Modelling
Watershed studies

Capital Delivery

W&WW Design
W&WW Construction
W&WW Process Study

Infrastructure Planning & Systems Design (IP&SD)



Udo Ehrenberg, P. Eng
Manager, Infrastructure Planning
& Systems Design

16 FTE

\$2.3M Annual Operating Budget

- Water Planning
- Wastewater Planning
- Stormwater Planning
- Geomatics

2016 Accomplishments

- Mike Urban Sewer Modelling (10 plus)
- WaterCAD modelling (20 to date plus)
- Form-1 DWS Alteration Approvals (16 to date)
- Development Application Reviews (388 to date)
- Flooding Master Servicing Study kick off
- Clearance of underground capacity for Annual Road program
- Major Capital Water Coordination Working Group
- Downtown Intensification Pilot Infrastructure Needs

2017 Outlook

- Master Plans & GRIDS – Flooding, Citywide Water/Wastewater/Stormwater
- Flooding and Drainage Master Servicing Study
- Schedule C Class EA for Old Dundas Road Sewage PS Emergency Overflow
- Construction of Low Impact Development-LID feature at Bay and Simcoe

Sustainable Initiatives



Bert Posedowski, P.Eng
Manager, Sustainable Initiatives

7 FTE

\$1.8M Annual Operating Budget

- Government Grant Funding
- Source Water Protection
- Harbour Remediation
- Facility Asset Management

2016 Accomplishments

- Completed Phase I of W/WW Facility Asset Management Program
- Appointed staff RMO and RMI designation under Clean Water Act. Initiated outreach and field investigation activities prescribed under Source Protection Plans.
- Administration of \$200M GIF funding Agreement Management Committee with Federal Partners.

2017 Outlook

- Initiate Phase II of W/WW Facility Asset Management Program
- Complete a water meter accuracy study for Freelon Municipal Well System
- Operate the RMO/RMI office to meet legislative requirements (Clean Water Act)
- Complete the New Greensville Well EA study
- Submit New Building Canada Fund Project Business Case Application

Capital Delivery



**Stuart Leitch, P. Eng.
Manager, Capital Delivery**

10 FTE

\$1.6M Annual Operating Budget

2016 Accomplishments

- Managed 50 projects with a total value of \$118M.
 - WTP Process Upgrades Study
 - Highland Garden Park Pumping Station
 - Old Ancaster Road Pumping Station
 - Wastewater Outstation Odour Control
 - Twenty Rd Wastewater Pump Station
 - Mill DC013 and Carl FC003 SPS
 - Hillcrest Water Reservoir – Phase 3
 - Stonechurch Water Reservoir Upgrades
 - Water Distribution Control Valves
 - Greenhill Ave. Reservoir/Valvehouse
 - Stoney Creek WPS Outstation Upgrades
 - Ancaster SPS Outstation Upgrades
 - Dundas SPS Outstation Upgrades
 - Southcote WPS Capacity Upgrades
 - York/Valley WPS Capacity Upgrades

2017 Outlook

- Management of 45 projects: 6 Studies complete, 14 in design, 12 under construction, 13 substantially performed

Good News Stories

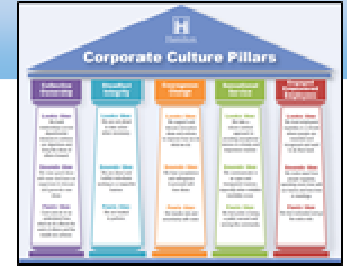


Courageous Change fosters academic partnerships

University of Waterloo – Water Treatment Research

University of Toronto – Algae detection and Water Filtration

McMaster University – Wastewater treatment & Environment



Empowered Employees provide Industry Presentations Conference Presentations:

WTP upgrade Study – AWWA ACE Chicago / OWWA Windsor

South Street WPS Replacement – OWWA Windsor

W&WW Design Manuals – OWWA Windsor



W&WW Facilities Asset Management Program – CNAM Halifax

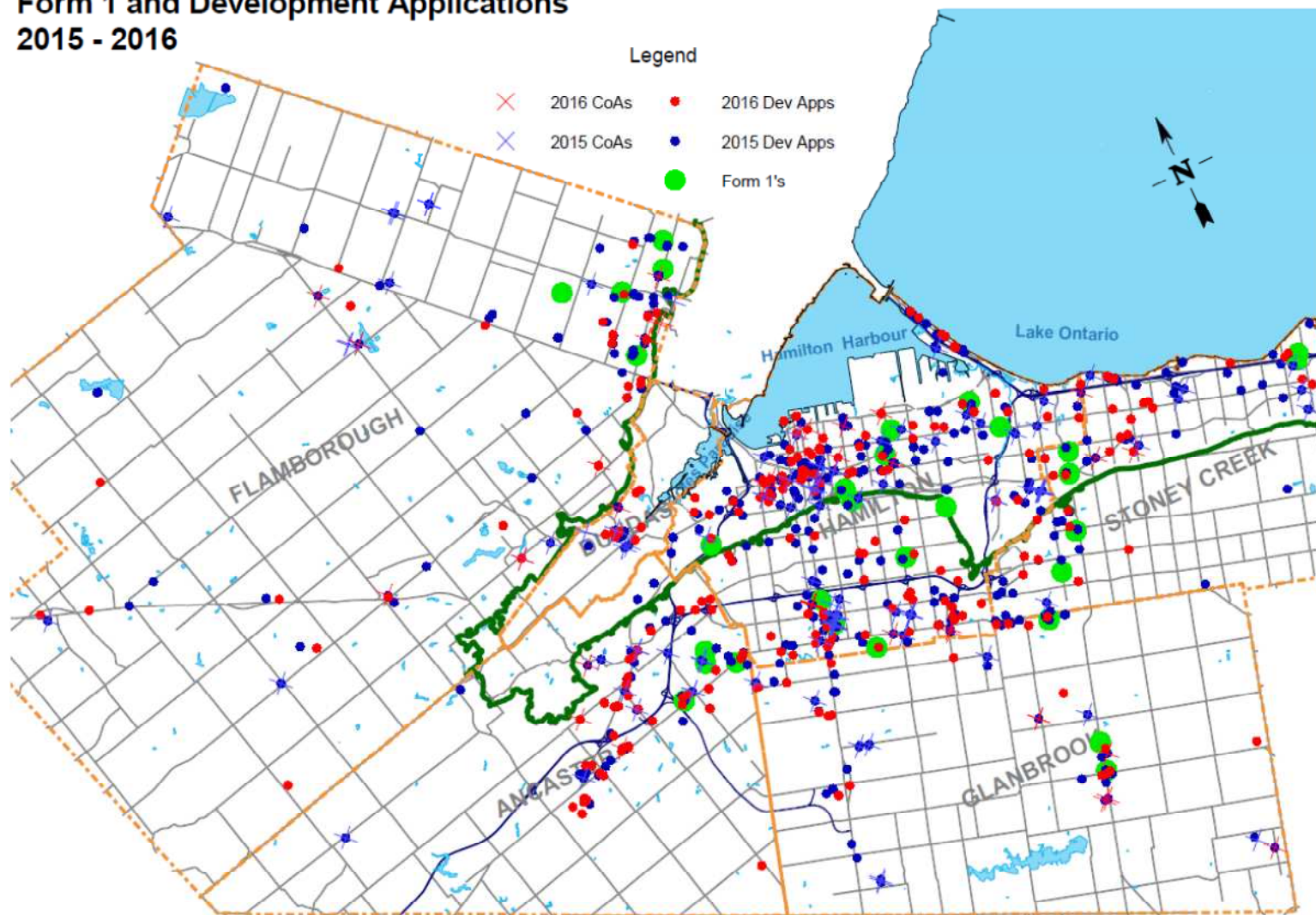


Process Improvement



5 of the last 6 years have reached \$1B in development permits

Form 1 and Development Applications 2015 - 2016



- Community
- People
- Processes
- Finance



Hamilton
Public Works



- Community
- People
- Processes
- Finance

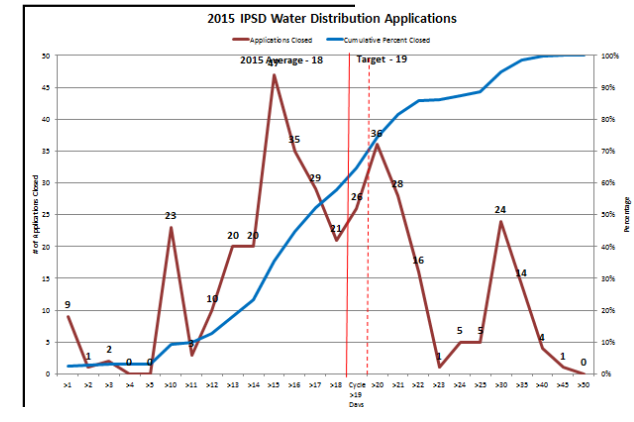


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Process Improvement



Improved Tracking
Improved Communication
Target response times established



ANNUAL TOTALS	2008	2009	2010	2011	2012	2013	2014	2015	2016
Development Applications	144	203	256	402	420	383	343	390	388
Committee of Adjustment	N/A	2	2	4	136	59	109	113	83
Real Estate / Surplus Lands	N/A	8	32	15	28	15	23	23	4
Road & Alleyway Closures	N/A	N/A	N/A	1	12	6	6	12	11
NEC Development Apps	N/A	N/A	N/A	N/A	N/A	N/A	15	15	7
Form 1's	N/A	5	37	20	20	29	32	25	16





Process Improvement



Development Applications – Water System Alterations

Development Guidelines Document

Updated in 2016 for use by developers

Process Flow documented

Roadmap of process completed to help identify where to improve

Water System Alteration Application Hotline

Launched April 2016 – Direct clarification of review commentary with proponents

Screening

Screening process remains in place with an independent consultant since 2015

New Staff development

Exposure to review process for new staff to increase capability

Consulting support lined up

Consulting teams built to help during high volume periods

Hydrant Flow test Database

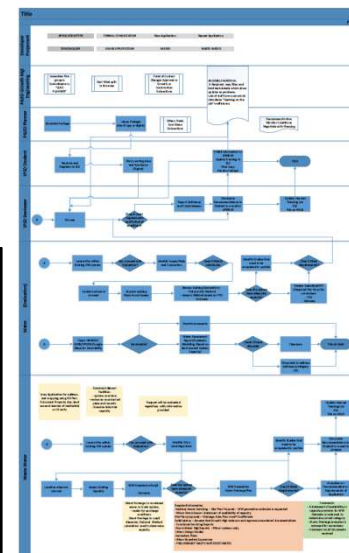
All data Continues to be available to proponents

Hydraulic Model – ModFlow

Full model available to developers agents

Development workshops

Undertaken in 2010 and 2015





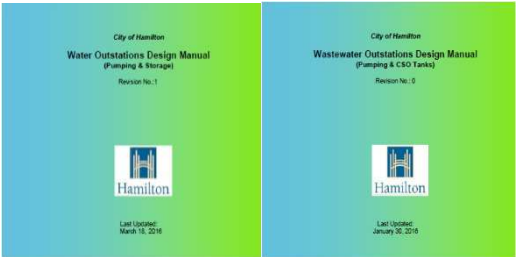
Process Improvement

Hydrogeology Report Guidelines

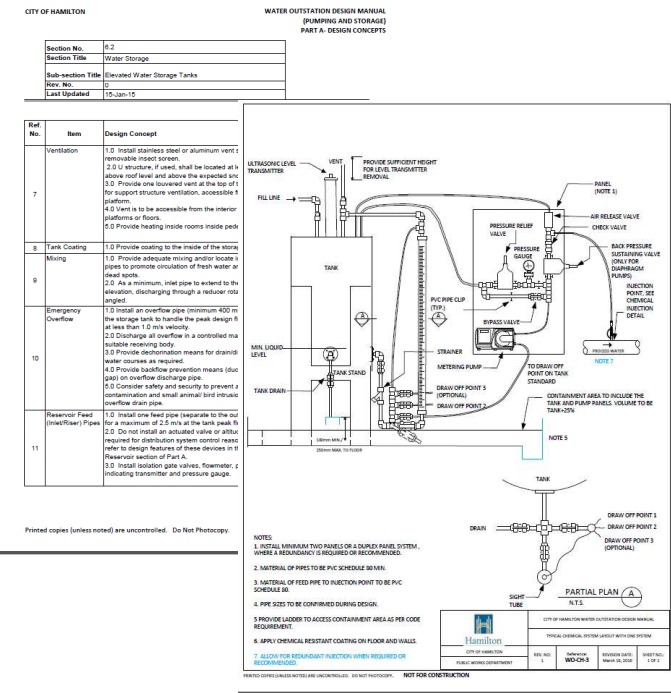
Development Review Guidelines

Design Manuals – Water and Wastewater Capital Works

- Improves consistency
- Improves communication
- Better project delivery
- Building on lessons learned
- Increased confidence
- Document Staff expertise
- Functional Checklist Format



Design Manual – W & WW Outstations



Process Improvement

- Project closeout videos – Lead staff highlight their projects in video to share with others.
 - increases learning by others
 - promotes team spirit
 - improves culture
- Capital Works Dashboard
 - Instant recognition of project locations
 - Identifies lead staff
 - Improves communication



Highland Rd WPS Upgrades



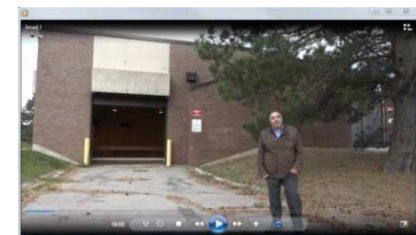
South St WPS Replacement



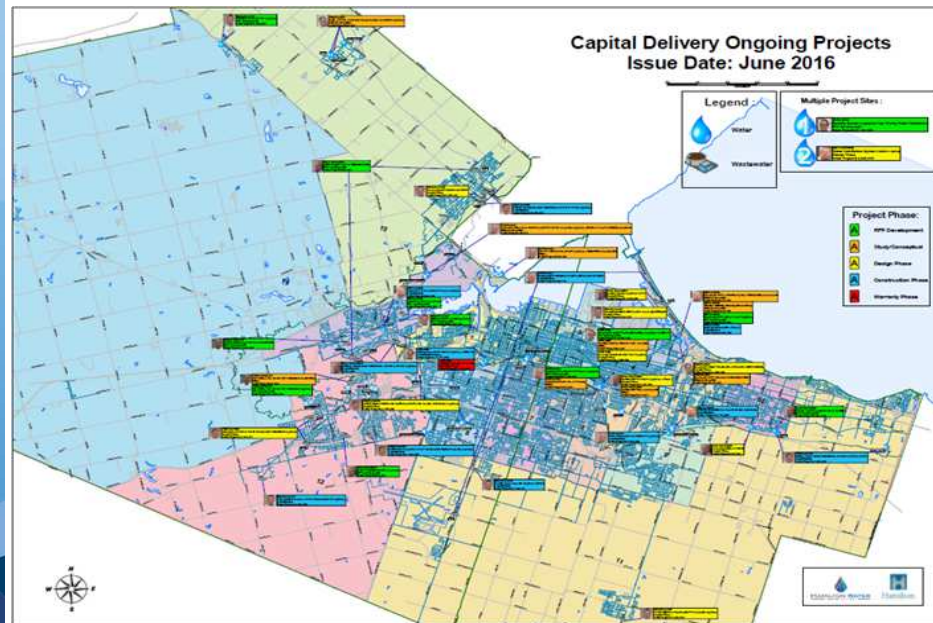
New Highland Gardens Park WPS



Twenty Rd SPS Upgrades



Stonechurch & Garth WPS Upgrades



Key Sectional Projects

Planning

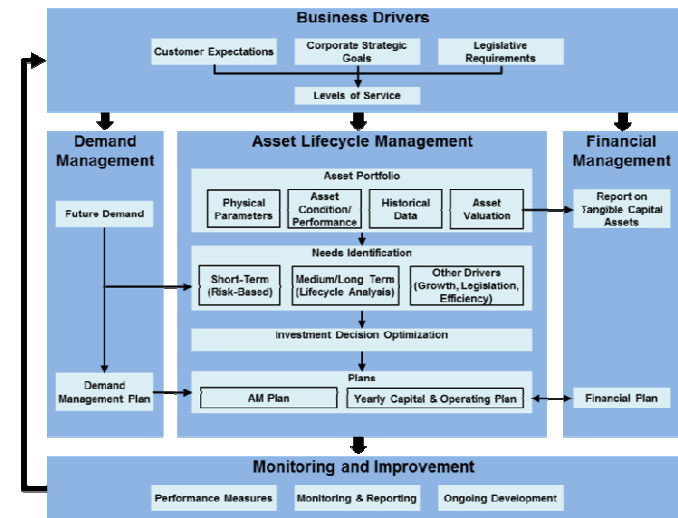
- Ancaster Water Tower EA
- Citywide Water/Wastewater/Stormwater Master Plan Updates/GRIDS/Flooding and Drainage Master Plan
- LRT Infrastructure Growth Impact
- Old Dundas Road Sewage Pump Station EA
- Pressure District 7 Water Tower and Pump Station EA
- Lynden EA – New Water supply
- W&WW Facility Asset Management
- Dundas WWTP – Asset Replacement Study



Key Sectional Projects

W/WW Facility (Vertical) Asset Management Program

- Hamilton Water operates and maintains facilities with an estimated replacement value of \$3.0 B.
- A formal process for assessing facility condition and developing long range rehabilitation and/or replacement plans began in 2007. The assessment and planning process has become increasingly complex as the Division gathers information and attempts to report on issues such as facility condition, lifecycle costing, facility valuation, operational risk, Level of Service and PSAB reporting.
- A new Water/Wastewater Facility Asset Management Program (WWFAMP) was initiated in 2014 with Phase I completed in 2016. Phase II will begin in 2016 and will include the purchase of software, data migration, and implementation of new procedures.
- 2% per year investment target for 50 year facility lifespan



Key Sectional Projects

Updates on Well System

Greenville - The Mid-Spencer/Greenville Rural Settlement Area Subwatershed study concluded in Q2 of 2016. The Division plans to initiate a Municipal Class EA in Q4 of 2016 to identify a new water well supply to supplement the existing Greenville municipal well.

Lynden - The municipal Class EA study to secure a second water supply continues. The EA is anticipated to be completed in Q4 of 2016. Design and construction of the second water supply will commence immediately following completion of the EA.

Freelton - A servicing study completed in 2015 identified the need for additional well capacity to meet future needs. A study looking at options will begin in Q4 of 2016.

Carlisle - A Municipal Class EA study to supplement water storage in the community has been put on hold while the City concentrates on the implementation of a water conservation program. The earliest the EA study can be expected to resume is 2018.



Key Sectional Projects

Citywide Flooding and Drainage and Master Servicing Study

Study Area: Combined Sewershed

Scope of Work:

- Review Operation of entire Combined Sewer System
- Establish Level of Service - Existing and Preferred
- Evaluate all reasonable opportunities for reducing flow into CSS
 - Surface eg. LID, land banking, road storage, ponds etc.
 - Piped eg. Detention, diversion etc., separation etc.

Considers:

Climate Change
Hamilton Harbour Impacts
Growth and Development
Intensification

Mitigation of Surface and Basement Flooding

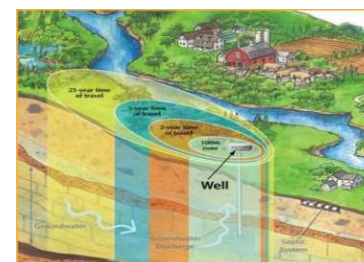
- Stakeholder engagement in Conceptual Design of Improvements.
- Capital Implementation Plan
- Develop a Resource Plan for future operation and maintenance



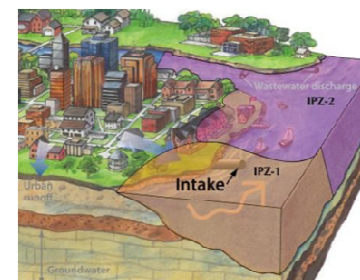
Key Sectional Projects

Risk Management Office – Hamilton Water

- q Source Protection Plans were produced as a requirement of the *Clean Water Act, 2006* with the goal of: Managing existing **significant** drinking water threats **and** Preventing new **significant** drinking water threats
- q The City of Hamilton's Sourcewater Risk Management Office – Provincial trained **one** Risk Management Official (RMO)
two Risk Management Inspectors (RMIs)
- q Activities undertaken by the Risk Management Office include:
 - § Conducting property surveys & inspections
 - § Producing and distributing educational materials
 - § Training staff
 - § Hosting public seminars on water well & septic tank operation and maintenance
- q Using policy tools the Risk Management Office's objective is to protect current and future municipal drinking water sources from contamination and depletion



Wellhead Protection Areas (WHPA)



Intake Protection Zone (IPZ)

Key Sectional Projects

Hamilton Harbour Remedial Action Plan – Watershed Focus

- Hamilton Harbour RAP began in 1985 due to degraded Harbour conditions.
- Hamilton Harbour AOC designated in 1987 under the GLWQA.
- New Focus on Urban and Rural Nutrient & Sediment Management
- Urban Draft Recommendations developed for Watershed Action Plans in 2016
- Rural Watershed Action Plans expected in 2017
- Future Policy and Operating actions needed by various Agencies (City, Province, CA)
 - Construction
 - Climate Change
 - Erosion
 - Road Maintenance
 - Storm Management
 - Sewer Use
 - Cross Connections
 - Low Impact Development
 - Stormwater Funding



Key Sectional Projects – Strategic Investments



Carbon Filters: Beach Blvd & Upper James
Substantial Performance 2016



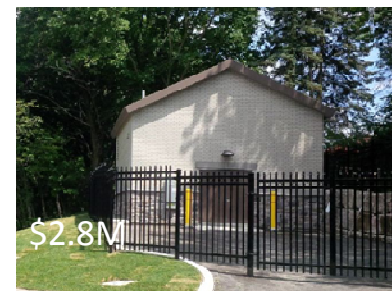
HGPPS – Substantial
Warranty Period 2016



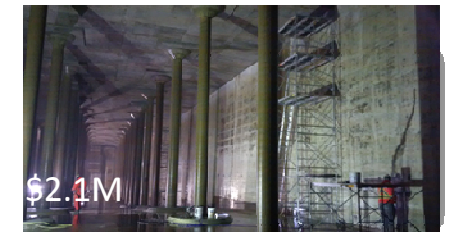
Twenty Rd SPS
Substantial Performance 2016



Hillcrest Reservoir Upgrades
Construction 2016



Old Ancaster Rd Water PS
Warranty Period 2016



Greenhill Reservoir Upgrades
Construction 2016



MIII/Carl SPS Replacement
Construction 2016

Key objectives:

Improved Service
Extend Lifecycle
Meet new regulation
Address Growth
Improve reliability

Key Sectional Projects - Strategic Investments

Future-Proofing Our 85-year Old Woodward WTP

Reliability



Aging
Infrastructure
Reliability &
Control

Contract 1 \$18.5M

Design: Q3 2016 to Q4 2017
Construction: Q1 2018 to Q2 2019

Meet Community Demands



Performance Improvement

Pre-treatment
Interim Capacity

Contract 2 \$87M

Design: Q1 2019 to Q1 2021
Construction: Q3 2021 to Q4 2025

Future Supply



Pre-Treatment
Ultimate Capacity

Contract 3 \$27M

Design & Construction: beyond 2028

Maintain Water Quality excellence

Key Sectional Projects– Strategic Investments

Randle Reef Sediment Remediation

Pier 15 Construction Complete

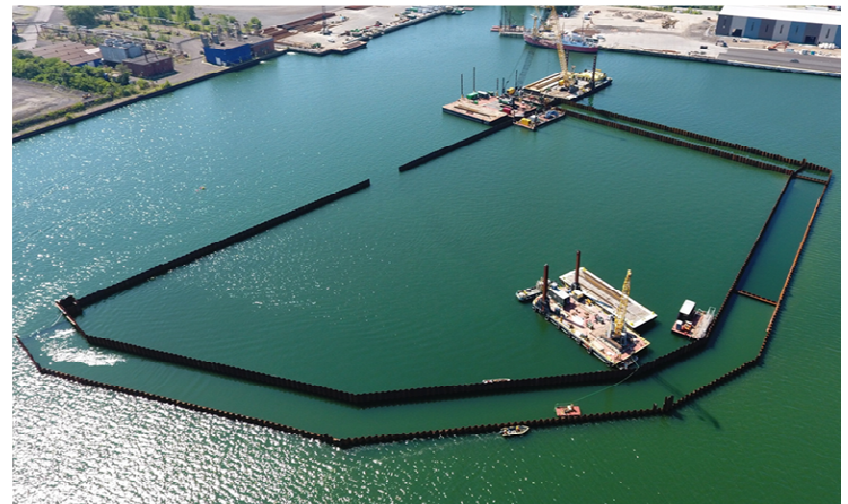
Contract 1 ECF construction – August 2015 to November 2017

- Dean Construction undertook Pier 15 replacement fall of 2015
- McNally International began ECF construction May 2, 2016
- All Cell 1 sheet piles in place as of August 2, 2016
- Dredge and Backfill August to December 2016
- Cell 2 construction – Begins April 2017

Contract 2 Sediment Dredging – November 2017 to June 2019

Contract 3 Capping and Landscaping – November 2019 to May 2022

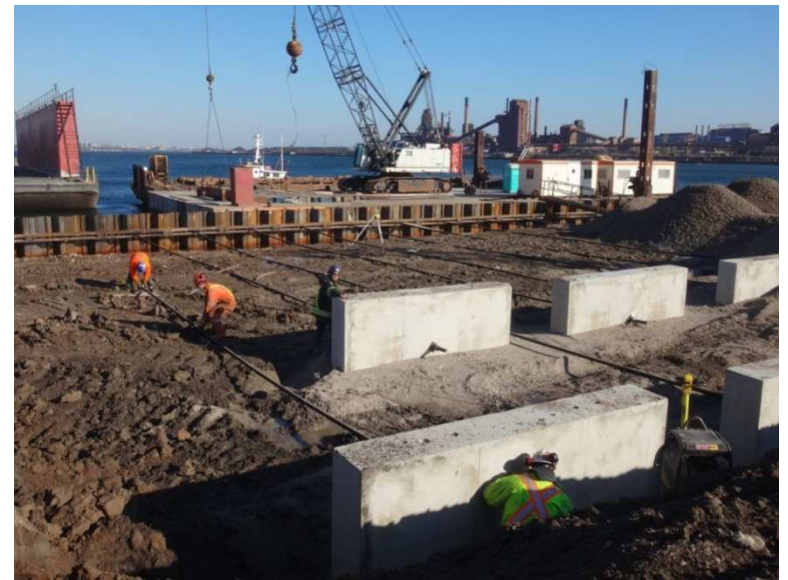
**Priority contaminants isolated
by 2019.**



Stage 1: Pier 15 Reconstruction Components



Anchor Block Lowered into position

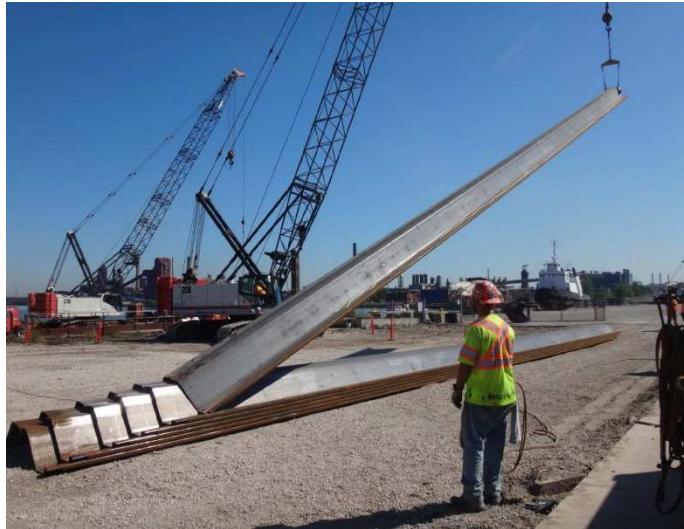


View of tie rod being installed


HAMILTON WATER
WATER IS LIFE

- Community
- People
- Processes
- Finance


Hamilton
Public Works



After Action Review

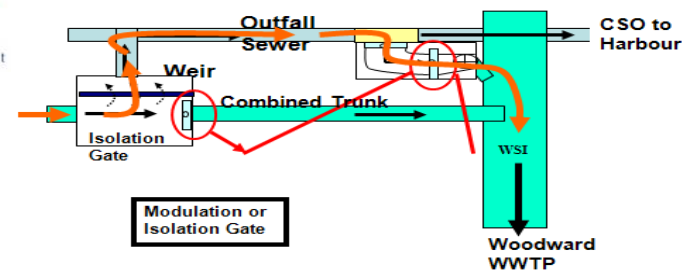
Real Time Control

- Total Capital Investment of \$11.5M that has captured an estimated average of 700,000 m³ / yr over the last 3 yrs.
- RTC Phase 2 future investment of \$10M

Parameter	2013 (Estimates)	2014 (Estimates)	2015 (Estimates)	Total (Estimates)
Total Suspended Solids	59,615 kg	69,260 kg	26,103 kg	154,978 kg
Total Phosphorous	400 kg	464 kg	219 kg	1083 kg
Ammonium Nitrogen	233 kg	270 kg	585 kg	1088 kg



Real Time Control – Burlington St & Wellington St



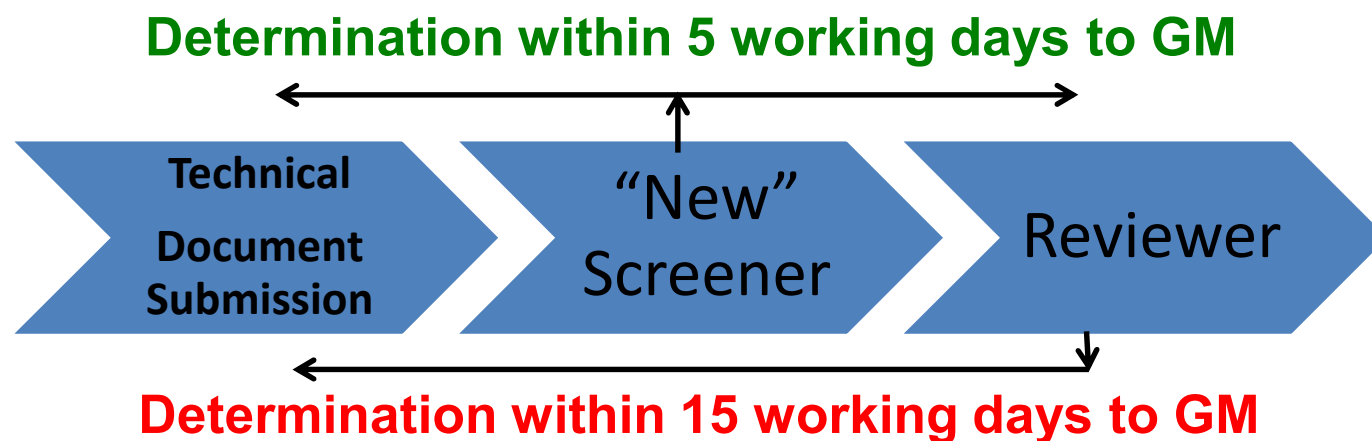
After Action Reviews



Development Review – Screening Process

Began Screening September 2015 – Hired Consultant
Screener Intercepts Development Applications at Submission
Screening Checklist filled out within 2-5 days
Avoids submission waiting in 15 day que with simple errors

Estimated saving = 53 files x 5 days = 265 days





Corporate Priorities

Communication

- Closure Videos
- Capital Works Dashboard
- Regular P&C Team and Sectional meetings

Performance Measurement

- Sectional Annual Reporting
- Sectional KPI development
- PA process
- Development Application Turnaround Tracking

Continuous Improvement

- Sectional Action Plans
- 6 Sigma process – Development Application, Flow monitoring
 - Screening
 - Process Flow Mapping
- Process Improvement Training
- Working on service level documentation

Collective
Ownership

Steadfast
Integrity

Courageous
Change

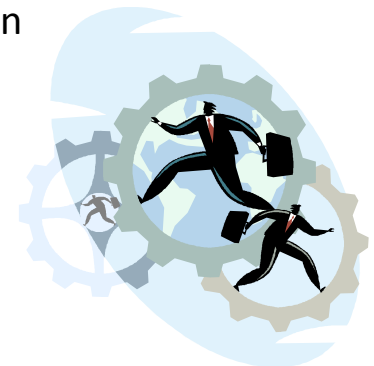
Sensational
Service

Engaged
Empowered
Employees



Alerts & Pressures

- **Hiring qualified and experienced leaders**
Greater expectations within the hiring process
- **High volume of Development Application**
Managing higher turnaround times
Summer Pattern of High Development Activity
- **Retirements – loss of experience and knowledge**
Mentoring new staff by experienced staff wherever possible.
- **New Government Funding Programs**
Numerous W/WW projects that may need acceleration
Timelines from 2016 to March 2018





Resource Pressures – P&C

Budget Outlook

Stormwater funding – keeping up with stormwater needs

LRT Infrastructure Planning

- Accelerated work planning
- Engage consultants in 2017 to meet demand.

WTP Upgrade

- Cashflow with other Woodward Capital
 - Phase 1 \$18M
 - 10 year Phase 1-2 \$105M

5 Year Resource Outlook – 2017 to 2021

Year Required	Amount Required	Job Title	Need
2017	1	Admin Secretary	Support for 3 sectional teams
2018	0	-	-
2019	1	QA Analyst	Quality Management support
2019	1	PM Asset Management	New Facility AM system

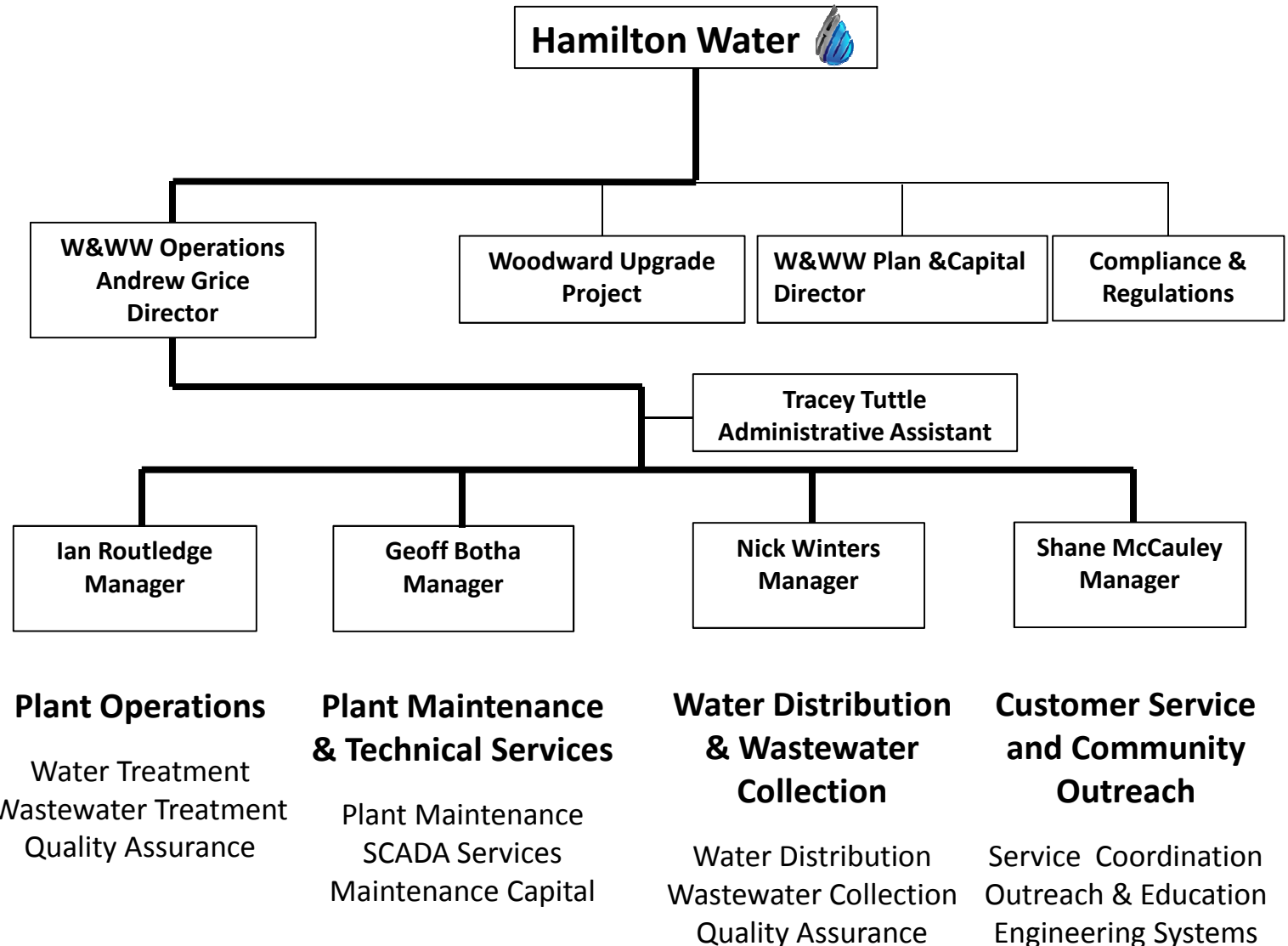
**From 2019 to 2021 there are no anticipated complement increases for Planning & Capital*



Hamilton
Public Works

Water & Wastewater Operations

W&WW Operations Management Team



Plant Operations



Ian Routledge
Manager, Plant Operations

43.0 FTE

\$30.6M Annual Operating Budget

2016 Accomplishments

- 82,646 ML drinking water treated (1.3% decrease from 2015)
- 106,505 ML wastewater treated (**75% capacity utilization**)
- Woodward WWTP – 129 months continuous compliance
- Dundas WWTP – 100% compliance in 2016 (600,000 kg solids removed, 15,000 kg phosphorus removed)

2017 Outlook

- 82,000 to 85,000 ML treated drinking water
- 110,000 to 115,000 ML treated wastewater
- Integration of Storm Water Stations
- Support the Woodward Upgrade Project

Plant Maintenance & Technical Services (PMATS)



Geoff Botha
Manager, Plant Maintenance & Technical Services

36.0 FTE
\$8.0M Annual Operating Budget

2016 Accomplishments

- SCADA Integration of Strom Stations
- Coordinated 4 large emergency works projects
- Cleansed CMMS system and work orders
- Implemented Capital Works and Service / Supply project control plan

2017 Outlook

- Stores and inventory upgrades
- Capital Projects:
 - Methane Sphere refurbishment
 - SCADA Master Plan Phase VI
 - Digester clean out and refurbishment
- Support the Woodward Upgrade Project

Water Distribution & Wastewater Collection (WD&WWC)



Nick Winters

Manager, Water Distribution &
Wastewater Collection

88 FTE

\$19.7M Annual Operating Budget

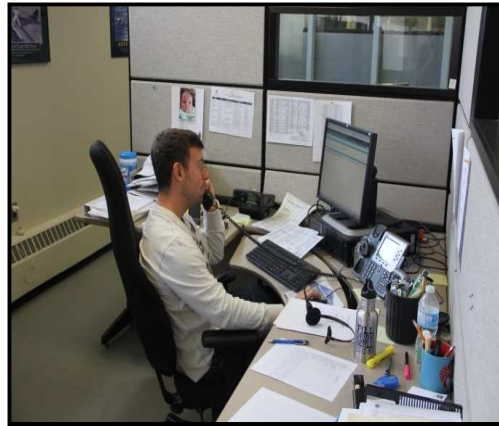
2016 Accomplishments

- Control Valve Maintenance & Repair Program
- MOECC watermain disinfection procedure
- Completed Spring Creek restoration project

2017 Outlook

- Initiate Water Works by-law update
- Waterloss program
- Finalize Inventory upgrades and control project

Customer Service & Community Outreach (CS&CO)



Shane McCauley
Manager, Customer Service &
Community Outreach

38.0 FTE
\$8.3M Annual Operating Budget

2016 Accomplishments

- Carlisle Water Conservation Program - Irrigation
- Implemented new Residential Protective Plumbing Program (3P)
- Implemented formal meter change out program
- Integration of Fleet Services into Hansen
- Outreach and education events: Children's Water Festival, World Waterday Walkathon, Open Doors Hamilton

2017 Outlook

- Support transition of call center rationalization project
- Hansen upgrades to enhance user interface and mapping functionality
- Backflow Prevention by-law update
- Lead awareness and clean harbour outreach program



- Community
- People
- Processes
- Finance



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Public Works

Good News Stories

Engaged and Empowered Employees

- Memorial plaque dedication to pay tribute



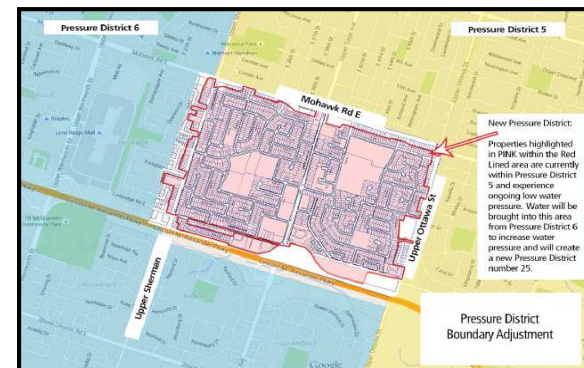
Collective Ownership

- Working with the Energy Office on Peak Day avoidance
- Result - \$2.9M cost avoidance



Sensational Service

- Creation of Pressure District 25 to increase water pressure for 1,500 homes



Process Improvement

Safety Equipment Room Kaizen Event (Woodward Treatment Facility)

To address inefficiencies related to servicing our customers at the storefront.

Benefit : Single location for all safety equipment
 Accessible with a vehicle for loading
 Equipment sign out and tracking protocol developed
 Positive influence on culture, team work and morale



Before



After



After

Process Improvement

Hydrant & Valve Repair Shop Kaizen Event (Dundas Yard)

Purpose: To create an efficient space to repair and refurbish fire hydrants and valves.

Benefit : An organized work area with all of the necessary tools and equipment
 Safe work area (all necessary H&S) equipment is available
 Controlled access for secure storage of high value inventory
 Positive influence on culture, team work and morale



Before



After



After

Process Improvement

Boots on the Ground (BOG)

- Field presence to understand business and support staff
- Monthly KPI's set for supervisory team



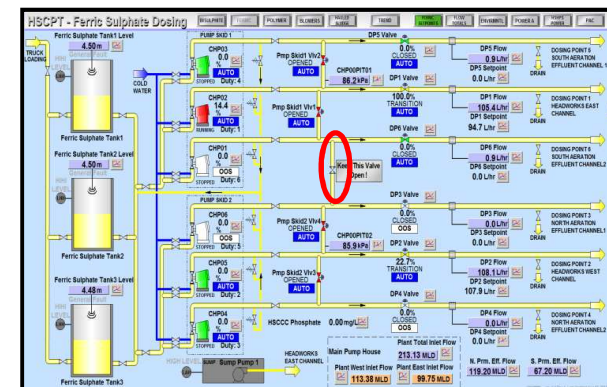
WD&WWC Construction

- Work flow, clear expectations and support
- 940 Work Orders completed in 2015 vs 1425 Work Orders completed through September 2016
- 50% decrease in contracted work for system repairs



Wastewater Phosphorus Removal Chemical Dosing System

- Installation of isolation valve
- 90% reduction in work order
- Reduction in pump run time



Key Sectional Projects

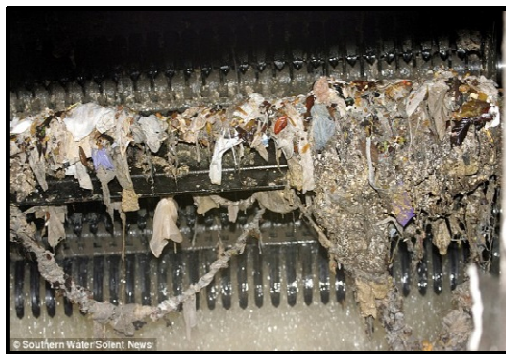
- Carlisle Water Conservation Program
- Water and Wastewater Treatment Maintenance Capital Program
- Hansen Upgrades / GIS Integration
- Clean Harbour Outreach Program & Lead Awareness Outreach Program
- Waterloss Program
- Municipal Locates Benchmarking Project
- Cross Connection Control Program
- Security of Water and Wastewater Assets
- Inventory Control and CMMS enhancements
- Support for the Woodward Upgrade Project



Key Sectional Projects

Clean Harbour Outreach Program

- Fall 2015 storm event created a lot of discussion about our harbour
- Development of outreach and awareness program
- Study to review source of the pollutants and mitigation strategies
- Capital upgrades to combined sewer overflow tanks
- Council approved a 0.75 FTE dedicated to the program for 5 years



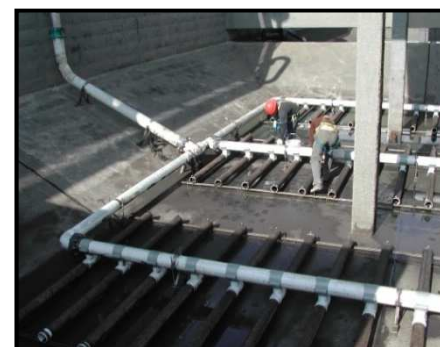
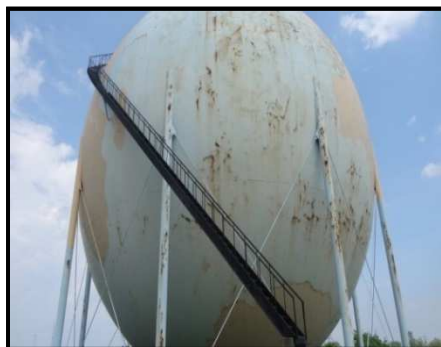
Key Sectional Projects

Water and Wastewater Treatment Maintenance Capital

- Main / King Combined Sewer Overflow Tank valve replacement
- Woodward WWTP headworks bar screen refurbishment
- Woodward WTP low lift travelling screen refurbishment

Accelerated maintenance capital to support the Woodward Upgrade Project

- Methane sphere painting and refurbishment
- Digester 4 clean out and refurbishment
- Aeration membrane replacement
- North secondary refurbishment



Key Sectional Projects

Carlisle Conservation Program

- Committee formed in summer 2015
- Target reduction – 57%
- Central irrigation control and WSIP program
- Outreach and communication strategy



Key Sectional Projects

Inventory Upgrades, Controls and CMMS Enhancements

- Upgrades of records retention
- Deployment of QR tagging system
- Update CMMS assets information and place holders
- Remote access for operations staff



After Action Review

Residential Protective Plumbing Program (3P)

- Council approved a new program delivery model in July 2016
- Program provides more City control, better value and peace of mind for our residents
- 85 Backwater Valves installed under new program model
 - Site Audits
 - Documentation review and Quality Control
 - Customer satisfaction survey



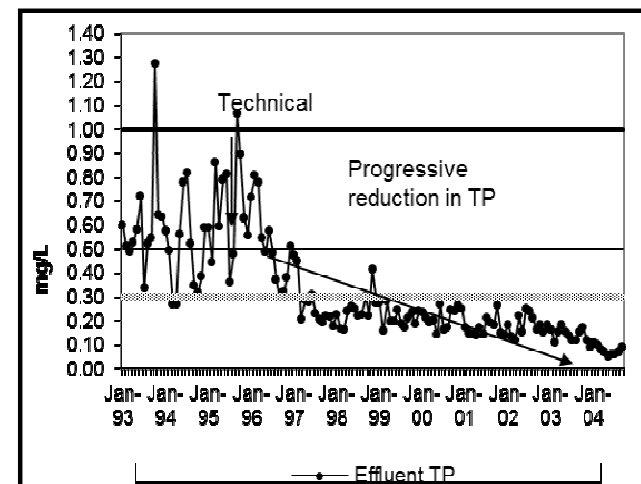
COMPANY	ADDRESS	PROG & INFO EASY TO UNDERSTAND	CONTR EXPLAIN WORK	CITY RECEIVED GOOD VALUE	CHANGES TO PROGRAM
Plugged Piper					
13731278		Yes	Yes	Yes	No
Dave Stokoe Plumbing					
13281047		Yes, most parts, asked contractor to explain installation	Yes, step by step	Yes	No, like the new change, less work and easier for H/O, reliable contractors listed
13360468					
13549351		Yes		Yes	No
13775039		N/A		N/A	N/A
13791573		Yes, most p		Yes	No
13795715		Yes	able to install	Yes	No
Rooter Guys Inc.					
13152341		Yes		Yes	No
13333487		Yes		Yes	No
13354770		Yes	hed while he installed BWV, function and how to clean	Yes	No, easier than old program
13377185		Yes	cess before & after	Yes	No, well organized
13506233		sk	on, how to clean BWV	Yes	
13596956		Yes, easier than		Yes	No
13757165		Yes	Yes	Yes	Yes, when I called in I gave mailing address, forms where sent to tenant address. Check for mailing address before sending forms or cheque.
13792586		Yes	Yes	Yes	Yes, it would be good to know that there is some maintenance (cleaning) by the H/O before BWV is installed.
13603608		Yes	Yes	Yes	No



After Action Review

Dual Point Addition for Phosphorus Control

- Plant optimization through staff engagement
- Currently piloting on the south WWTP
- 10% addition of ferric at back end of process has resulted in 25% reduction of total phosphorus
- Enhanced quality of effluent discharged to the harbour



After Action Reviews

Storm Stations

- Integration of Grafton stormwater pumping station
- Station upgraded to include SCADA in 2016 and provide remote control
- August 2016 approximately 1600 m³ pumped through facility alleviating potential flooding to Beach Blvd properties
- Collective ownership with Engineering Services (construction), Operations (maintain) and Hamilton Water (operate)
- Additional Centennial stormwater pumping station online in Q4 2016

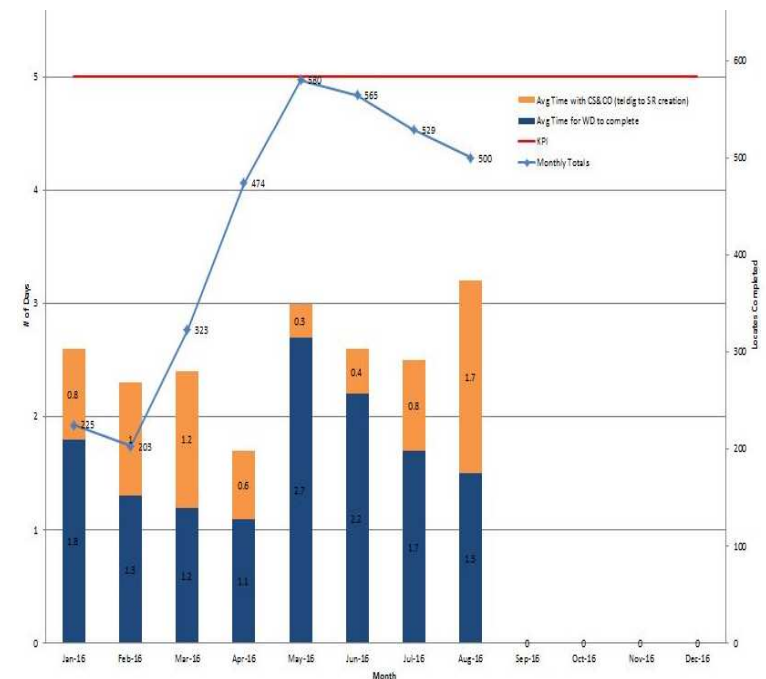


Grafton Stormwater Pumping Station

After Action Reviews

Locates Program

- Process improvement project in 2016 amongst CSCO and WDWWC
- Work flow process mapping
- Clear expectations and responsibilities established
- Operator engagement to develop and plan schedules
- Reduced average turn around time for locates to less than 3 days from 12.7



Corporate Priorities

Communication

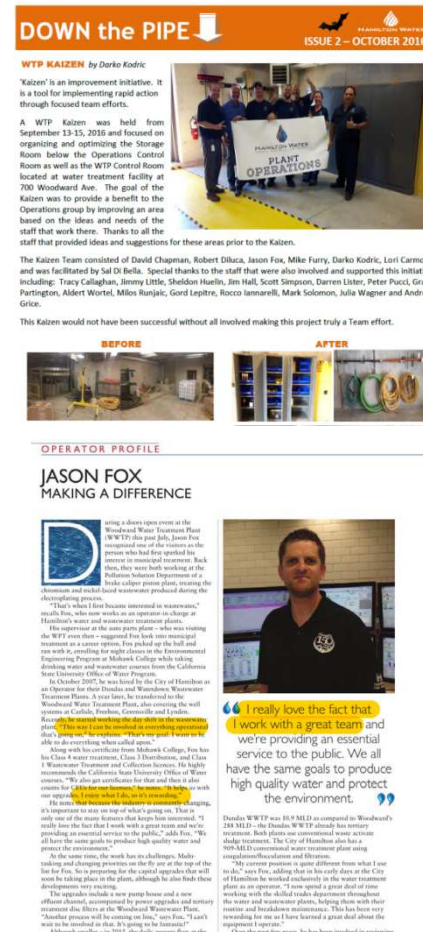
- Down the Pipe Newsletter
- Divisional and Sectional Meetings
- Sectional Annual Report Presentation to Staff

Performance Measurement

- Metrics and KPI's
 - Work Order Turnaround Time
 - Work Orders Completed Per Day
 - Locate Turnaround Time
 - Number of Hydrants Out of Service
 - Supervisor Site Visits per month
 - WDWWC Construction Targets
- Consistent Goals and Expectations in PA Tool

Continuous Improvement

- Implemented PMATS Process Improvement Capital Works and Service / Supply project control plan
- Three staff enrolled in Process Improvement Green Belt training
- After Action Reviews and Debriefs



- Collective Ownership
- Steadfast Integrity
- Courageous Change
- Sensational Service
- Engaged Empowered Employees

Alerts

- Staffing turnovers and hiring of licensed and experienced operators
- Regulatory Compliance
 - MOECC watermain disinfection procedure
 - Woodward WWTP compliance during Woodward Upgrade Project
 - Year round disinfection of the Woodward WWTP effluent discharge
- Spoils management – limited lifespan within current agreement and no winter storage
- Call centre rationalization project implementation phase
- Staffing resources to support corporate priority projects
 - Woodward Upgrade Project





Resource Pressures

5 Year Resource Outlook – 2017 to 2021

Year	Number	Job Title	Need
2017	1	Technologist	Develop procedures, asset inventories
2017	1	SCADA Technologist	Provide program support, SAT, FAT
2017	1	Process Supervisor	Provide day to day support for the WUP
2017	1	Maintenance Operator	Provide day to day support for the WUP
2017	1	Water Distribution Supervisor	Implementation of afternoon shift
2017	2*	Project Managers	Current temporary positions required to support the Sewer Lateral Cross Connection Program
2018	1	Quality Assurance Analyst	Administer licencing and training program
2018	1	SCADA Technologist	Support the Woodward Upgrade Project
2018	1	Data Clerk	Support the Woodward Upgrade Project
2018	1	Electrical Technologist	Support the Woodward Upgrade Project
2018	1	Backflow Technician	By-law enforcement
2020	4	Maintenance Operator	Support the ongoing operation of the facility

* As referenced in Sewer Lateral Cross Connection Program Extension Council Report PW14028A



Resource Pressures – Woodward Upgrades

5 Year Resource Outlook - Woodward Upgrade Project (WUP)

Year	Number	Job Title	Need
2017	1	Technologist	Develop procedures, asset inventories
2017	1	SCADA Technologist	Provide program support, SAT, FAT
2017	1	Process Supervisor	Provide day to day support for the WUP
2017	1	Maintenance Operator	Provide day to day support for the WUP
2018	1	SCADA Technologist	Provide program support, SAT, FAT
2018	1	Data Clerk	Manage contract documents
2018	1	Electrical Technologist	Support the electrical upgrade sub-project
2020	4	Maintenance Operator	Support the ongoing operation of the facility
TOTAL	11		

- 2016 Budget Presentation identified 11 FTE's associated with the WUP
 - 2018 – 2 FTE (SCADA Technologist, Data Clerk)
 - 2020 – 9 FTE (5 Operators, 2 Instrument Techs, 2 Millwrights)
- To Support the implementation of the WUP
 - Advance 5 FTEs from 2020 to 2017 & 2018 for temporary positions
 - Upon project completion positions will be converted to Maintenance Operators to support the ongoing operation of the facility



Compliance & Regulations Section

Compliance & Regulations Section



Rosa Gonzalez
Manager, Compliance & Regulations

45.0 FTE
\$5.5M Annual Operating Budget

- Environmental Monitoring and Enforcement
- Compliance Support Group
- Environmental Laboratory

2016 Accomplishments

- Full implementation of the Learning Management Database to all Hamilton Water staff including reporting capabilities
- 97 % of former Sewer Discharge Agreements are now permits under the new Sewer Use Bylaw
- Maintained Laboratory accreditation and MOECC licensing for drinking water testing

2017 Outlook

- Facilitate an Occupational Health & Safety Compliance Audit of Hamilton Water
- Validation of 2 new instruments ICP/MS (trace metals analysis) and GC/MS (volatile organics)
- Infor (Hansen) data population and implementation of automated work order management plan
- 100 % - fully implemented Sewer Use Bylaw permits

Good News Stories

Environmental Laboratory

- Maintained Laboratory accreditation and MOECC licensing for drinking water testing
- Celebrating 20 years of ISO 17025 Accreditation



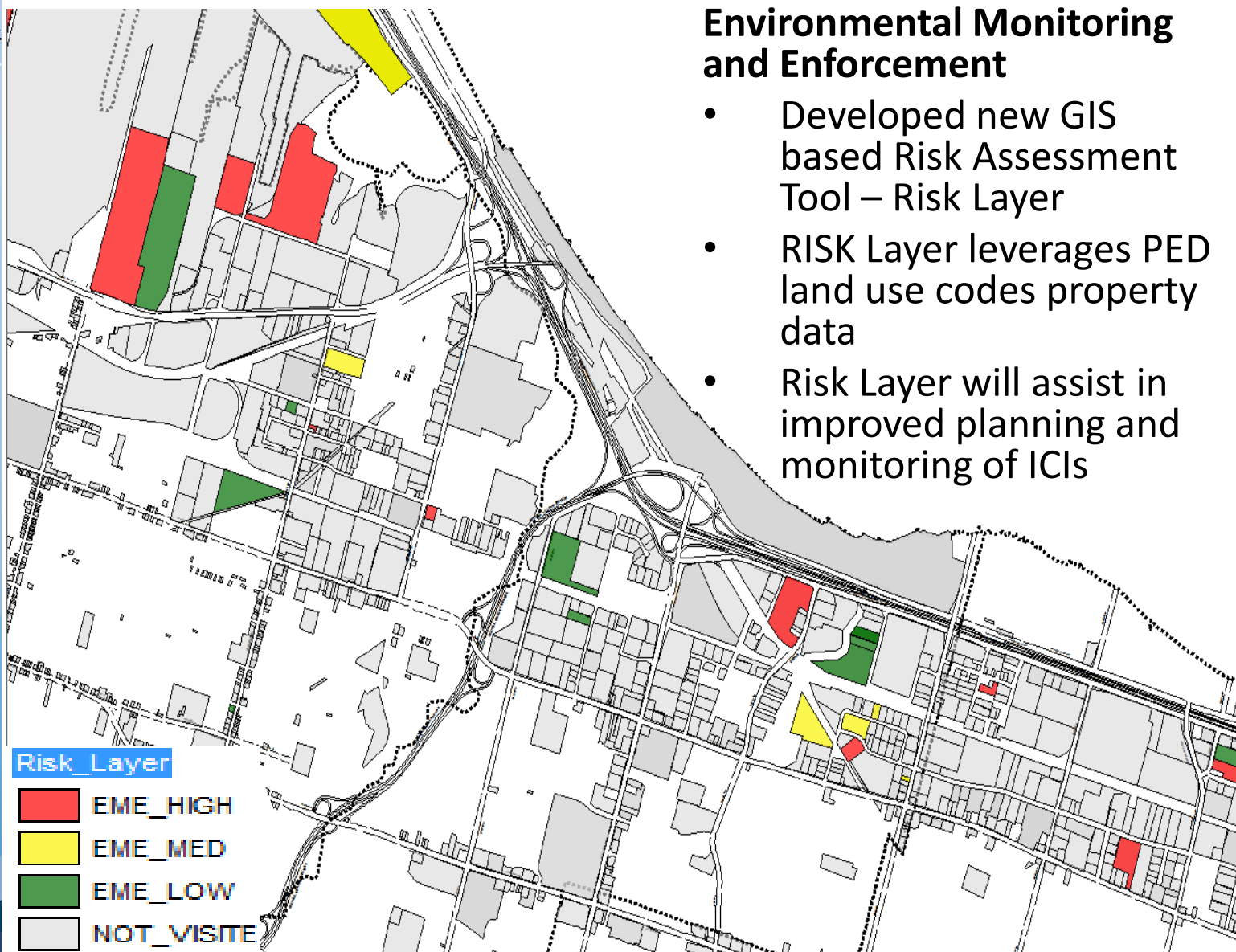
Compliance Support Group

- No findings or Opportunities for Improvement identified by 3rd Party DWQMS Audit
- Standard of Care training completed for Acting General Manager and new Councillor

Good News Stories

Environmental Monitoring and Enforcement

- Developed new GIS based Risk Assessment Tool – Risk Layer
- RISK Layer leverages PED land use codes property data
- Risk Layer will assist in improved planning and monitoring of ICIs



Process Improvement

Environmental Laboratory

- New instrument for Trace Metals analysis in the method development phase, will result in cost savings for consumable, increased productivity and lower detection limits for contaminants
- New instrument for Volatiles analysis in the method development phase (Replacement)



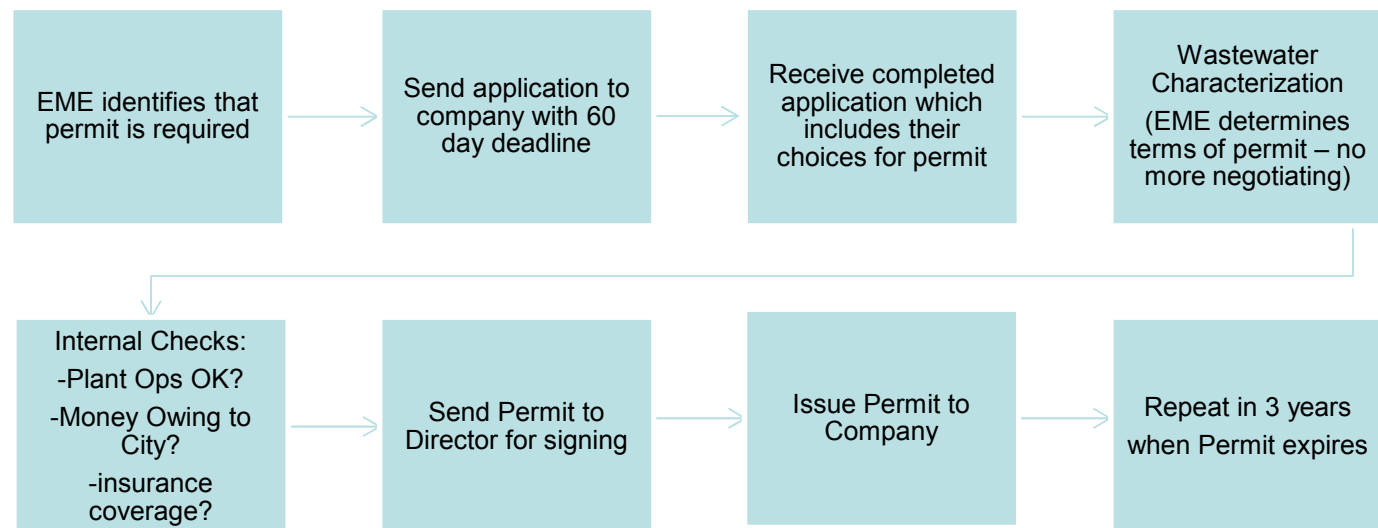
Process Improvement



Environmental Monitoring and Enforcement

New streamlined Sewer Use Permitting process successfully implemented

- **Faster Turn Around Time:** 3 months: previously 1-2 years
- **More checks in place:** Finance, Risk , CCTV, PO
- **Conditions embedded directly into Permit:** Sewer maintenance, informing City, discharge restrictions
- **Information is current:** Permits are renewed every 3 years





Key Sectional Projects

Compliance Support Group

- Occupational Health & Safety Management System Gap Analysis completed
- Improvements to the Beyond Compliance Operating System Database to improve reporting functionality and provide quicker access to Document Control, Quality Non-conformances and Meetings applications
- Roll out of LMD Welcome Page to Hamilton Water Staff

Environmental Monitoring and Enforcement

- Phase 2 of Infor (Hansen) Database (Spills, Code Enforcement Modules) to be built
- Bylaw parameter review in 2017 to determine whether additional parameters are needed or concentration limits should be modified
- Construction of new Eastport Waste hauler station to begin in 2017





After Action Reviews

Compliance Support Group

- Facilitation of Emerging Issues meetings:
Proactive approach has helped Hamilton Water to be better prepared for actual/future challenges
- Infrastructure Review Debrief:
Ensures that Top Management are aware of Infrastructure Review outcomes early in the calendar year

Environmental Monitoring and Enforcement

- Populated the Infor (Hansen) database and conducted staff training
Storing IC&I information
Linked to sampling
Linked to permits
- Improved Permit Process resulted in tighter processing timeframes from old agreement system (3 months: previously 1-2 years)
- New enforcement tool
Courts approved set fines
Staff training on ticketing
Tickets to be issued

HAMILTON Offence Number: 0963126B
Code: 4760
Certificate of Offence / Procès-verbal d'infraction

I/Je soussigné(e)
Believe and certify that on the day of
Crois et atteste que le 2 0





Alerts

Environmental Laboratory

- Pending changes to MOECC Regulations related to laboratories

Compliance Support Group

- Possibility of regulations/standards around Wastewater QMS

Environmental Monitoring and Enforcement

- Outcomes of the upcoming Sewer Use Bylaw parameters review and its impact on ICI businesses



Resource Pressures

Budget Outlook

Project/Program/Pressures

- CHEL – None
- CSG – None
- EME – 1 student- one term

5 Year Resource Outlook – 2017 to 2021

Year Requested	Amount Required	Job Title	Need
2018	1	Technician (Two-year position)	Corrosion control (approved by Council Nov 2015)
2019	1	Health and Safety Coordinator	Coordinate H&S activities and legal requirements across Hamilton Water

Drinking Water Quality Management System



Drinking Water Quality Management System

2016 Milestones Overview

- Conducted Standard of Care Training for new members of Council (required under Safe Drinking Water Act)
- Submission of Annual Drinking Water Report to MOECC and made available to the public (O.Reg. 170/03, Section 11) by February 28, 2016
- Submission of Annual DWQMS Summary Report to the members of Municipal Council and made available to the public (O.Reg. 170/03, Schedule 22) by March 31, 2016
- DWQMS Off-site external document review

2017 Milestones Forecast

- DWQMS Off-site External System Surveillance audit scheduled for May 2017
- Submission of Annual Drinking Water Report to MOECC and made available to the public (O.Reg. 170/03, Section 11) by February 28, 2017
- Submission of Annual DWQMS Summary Report to the members of Municipal Council and made available to the public (O.Reg. 170/03, Schedule 22) by March 31, 2017

Woodward Upgrades Section

Woodward Upgrade Section



Dan Chauvin, C.E.T., PMP
Director, Woodward Upgrade

8 FTE

\$1.2M Annual Operating Budget

- Woodward Upgrade Project
- Biosolids Management Project (P3)
- Project Management Office (PMO)
- Windermere Wetland

2016 Accomplishments

Tertiary technology awarded to Aqua-Aerobic (Disc Filter)
Contract 1: Main Pumping Station issued Tender
Issued RFPQ Contract 2: Electrical Power Upgrades
Undertook various risk mitigation initiative's such as; Value Engineering / Constructability Workshops, construction coordination meetings, Risk Matrix, etc.
Closed the RFP For Biosolids Management Project (P3)
Maintain key stakeholders engagement specifically, MOECC, HHRAP Office, Joint Stewardship Board, HUC, HCA, PPP Canada, Hamilton Water Sub-Committee, etc.
Expanded 'PMO Service' to support Infrastructure Planning and System Design and Plant Operations
Managed Windermere wetland
Pier 25 maintenance dredging

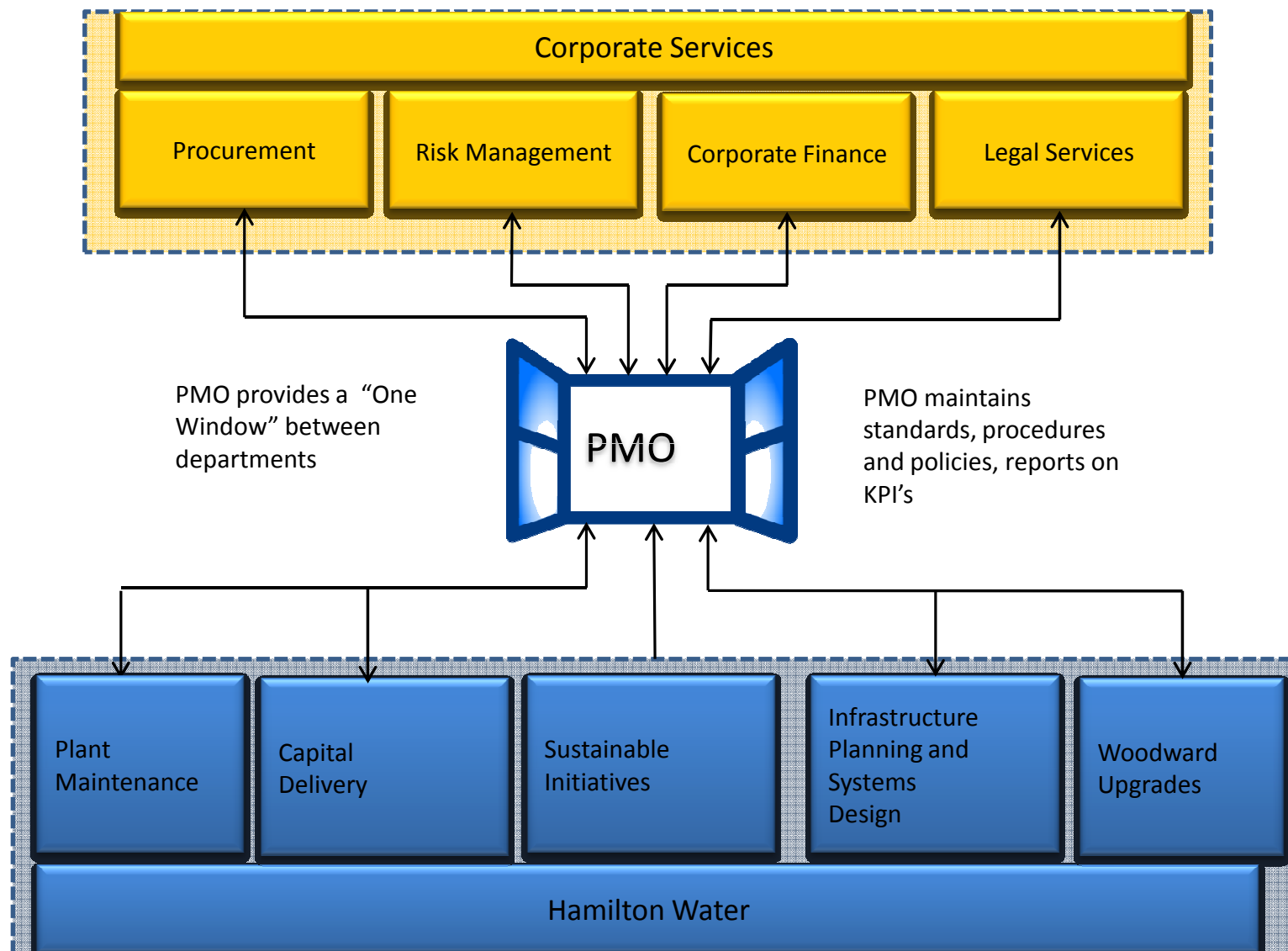
2017 Outlook

Award Contract 1: Main Pumping Station Tender
Construction begins at WWTP !
Award Contract 2: Electrical Power Upgrades
Detail Design on Contract 3: Tertiary Treatment Upgrades
Award RFP for Biosolids P3 Project- Construction begins
Continue with risk mitigation initiative's
Continue collaboration with key Stakeholders
PMO to develop centralized data warehouse with IT Services



Project Management Office

PMO – Functional Overview



Hamilton Water Priority Projects





Hamilton
Public Works

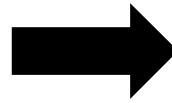
Woodward Upgrade Program



Background

Three key City objectives had to be considered when developing the WWTP Upgrade Project:

Improved Effluent Quality



To meet Hamilton Harbour Remedial Action Plan (HHRAP) Targets to assist in De-list Harbour as Area of Concern with IJC

Capture and Treat Additional Wet Weather Flow



To capture system-wide and treat >90% of wet weather flow with a minimum of primary treatment while meeting RAP CSO Target

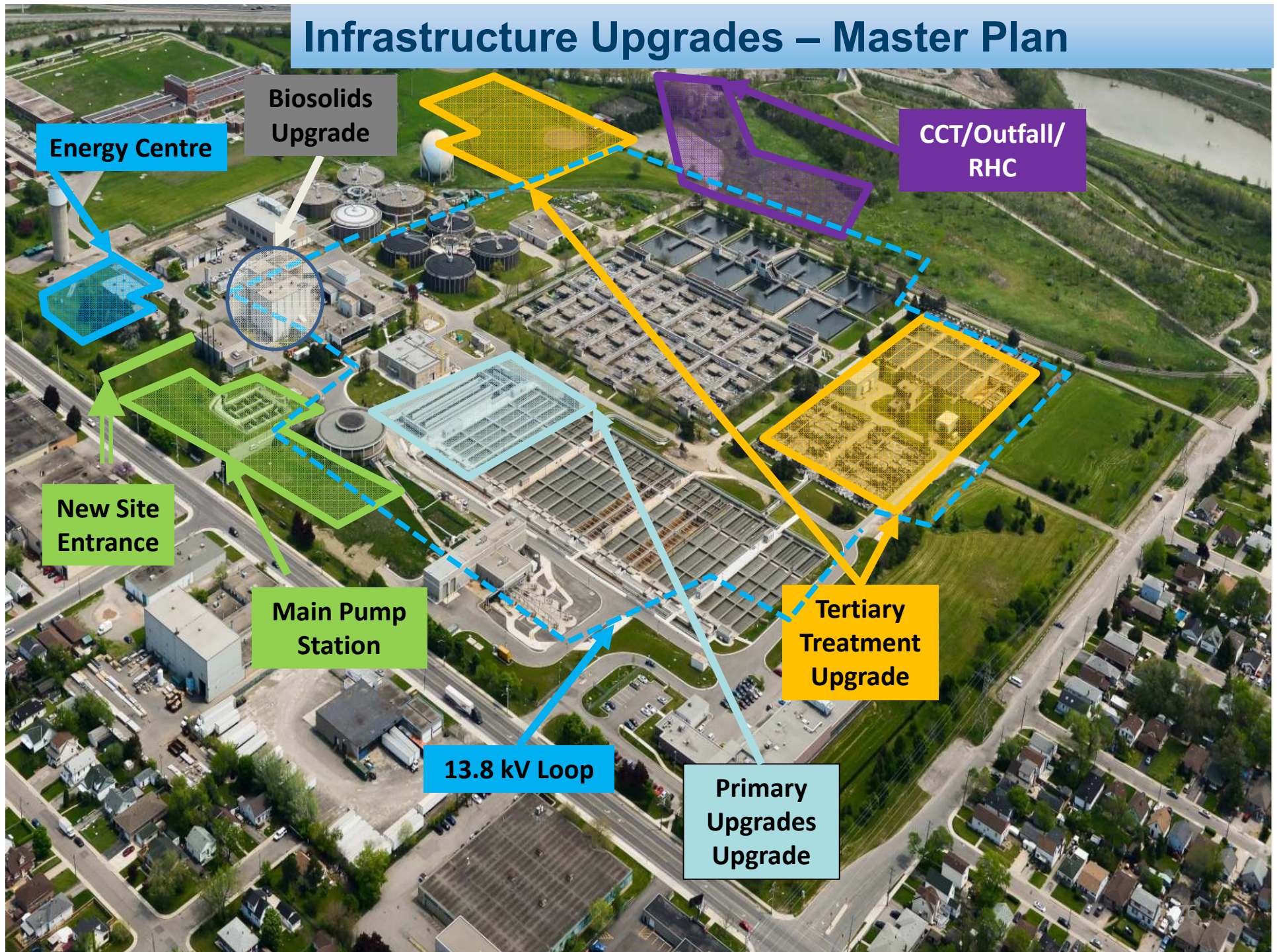
Expansion



Address capacity expansion need to accommodate development growth as per Places to Grow (100,000 population equivalent by 2031)

A formal Master Plan was completed analyzing options through full public and stakeholder consultation process.

Infrastructure Upgrades – Master Plan





Project Highlights – Key Features

- q In early 2011, the Project was delayed to address negative impacts resulting from economic downturn and changing planning conditions,
- q Staff developed a revised implementation plan that considered moving ahead with a water quality upgrade by 2021 and differing expansion for growth to 2025+,
- q August 2012, Council approved the revised implementation plan which was subsequently submitted to Infrastructure Canada for approval (as to re-establish their funding commitment),
- q City received confirmation from Federal Minister in November 2013 reaffirming their \$100 million contribution (City already received \$100 million Provincial contribution),
- q Contribution Agreement (CA) executed March 2015 allowing for all eligible incurred costs to be recovered. Key aspects of the CA include but not limited to:
 - o Identifies a Project Completion Date of no later than January 31, 2022
 - o Requires the establishment of an Agreement and Management Committee
 - o Identifies Reporting, Auditing and Evaluation requirements
 - o Establishes Communication protocols
 - o Establishes payment mechanisms
 - o Etc.

Woodward Upgrade/Expansion – Construction Budget

Phase 1 - Completed Works

Dewatering and Biogas Upgrades:	\$ 45.0 million
Primary Clarifiers Upgrades:	\$ 73.9 million
Total Completed Works (actual spending):	\$ 118.9 million

Phase 1 – Clean Harbour Project (Ongoing 2017 to 2021)

Tertiary Treatment:	\$ 123.4 million
Chlorine Tank, Outfall, RHC Upgrade, Spur Line Relocation:	\$ 29.1 million
Power Upgrades:	\$ 71.8 million
Raw WW Pumping Station:	\$ 89.6 million
Collection System Control Upgrades:	\$ 10.0 million
Total Clean Harbour Project (estimated excl. contingencies):	\$ 323.9 million

Total Phase 1 **\$ 442.8 million**

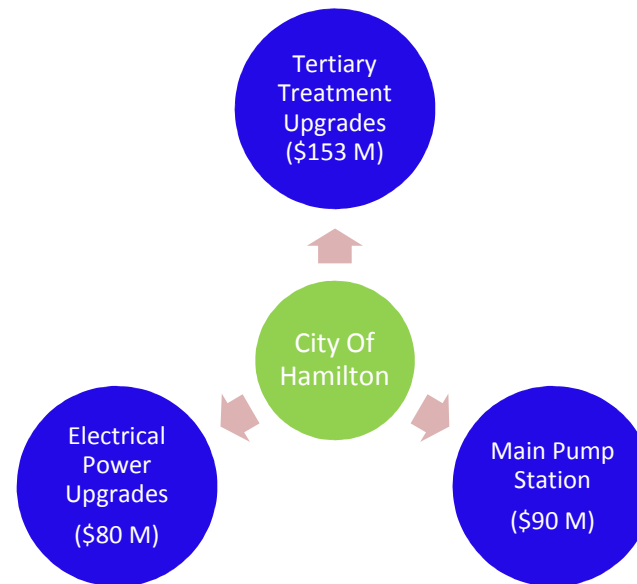
Phase 2 - Woodward Expansion (Future 2027 to 2030)

Tertiary Treatment:	\$ 200.0 million
Dewatering and Biogas Upgrades (Phase 2):	\$ 7.5 million
Power Upgrades:	\$ 10.0 million
Total Woodward Expansion (estimated excl. contingencies):	\$ 217.5 million

Total Woodward Upgrade/Expansion Construction Budget **\$ 660.3 million**

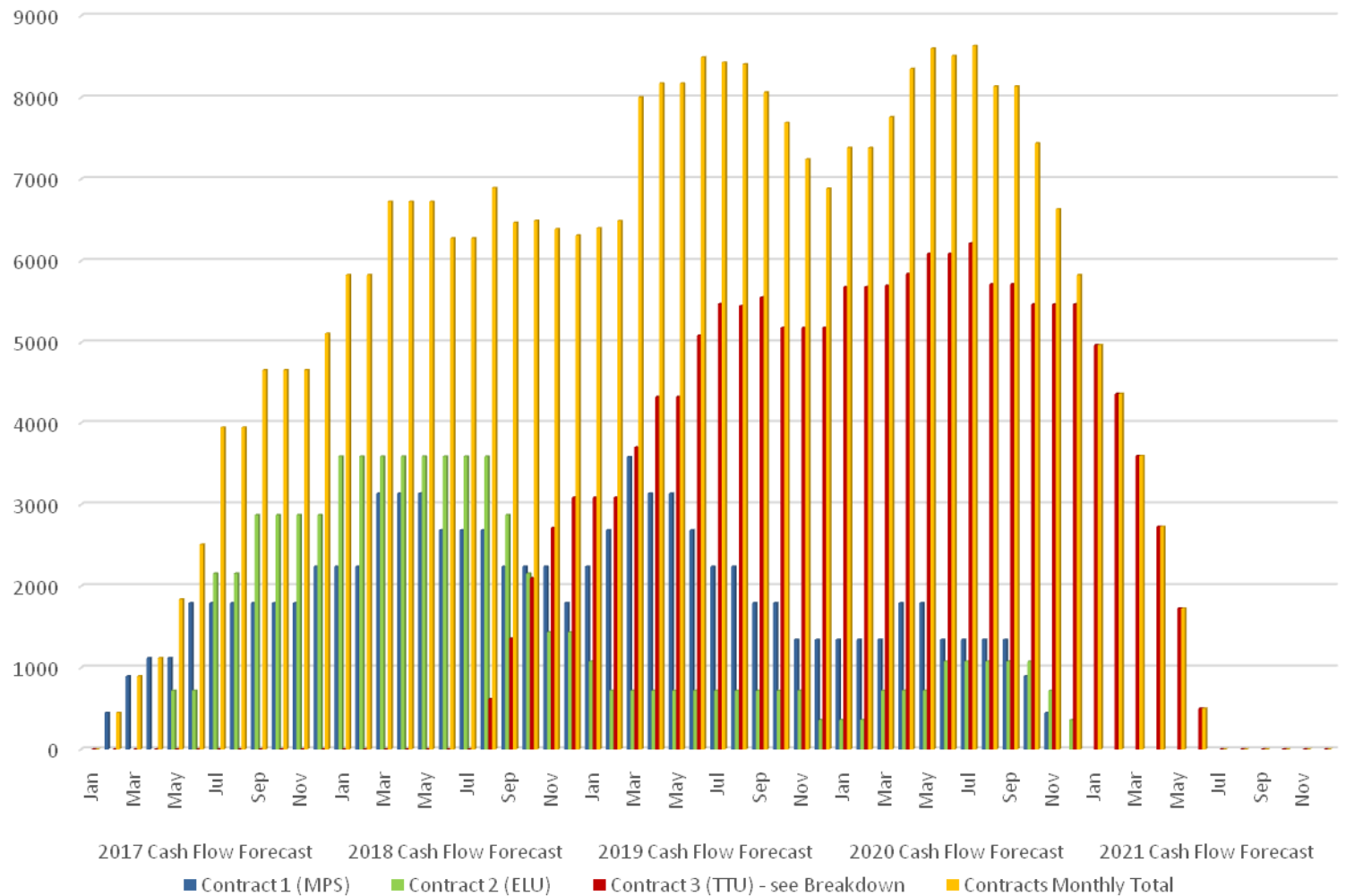
Woodward Upgrades Project - Budget

- § Estimated Construction Budget: \$325 Million
 - Green Instructure Fund (GIF) Contribution
 - \$100 Million from the Province of Ontario
 - \$100 Million from the Government of Canada
 - Development Contribution
 - ~ \$18 Million (Development Charges)
 - City Contribution
 - ~ \$106 Million (Reserves, Debt Borrowing, Rates)
- § Delivery Model: Design – Bid - Build (DBB)



Aggressive Cash Flow (\$323M over 5 years)

Woodward Upgrades Project- Combined Monthly Cashflow Forecast



Tender Status

Contract 1: Main Pump Station (MPS)

Estimate: \$90 million
Issued November 1, 2016,
Closes December 15, 2016
Construction to start March 2017

Contract 2: Electrical and Chlorine System Upgrade (ELU)

Estimate: \$80 Million
Status: Tender package is at 90% Detailed Design milestone
Ready for Tender in Q1 2017
Construction start at the end of Q2 2017

Contract 3: Tertiary Treatment Upgrade (Chlorine Contact Tank and Red Hill Creek Upgrades) (TTU/CCT)

Estimate: \$150 Million
Status: Tender package is at 90% Preliminary Design milestone
Detailed Design to start Q1 2017
Tender at Q2 2018
Construction start Q3 2018

Schedule

Contract 1 - Main Pump Station



Contract 2 - Electrical Upgrades



Contract 3 - Tertiary Upgrade/CCT/Outfall/RHC



J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
2014	2015	2016	2017	2018	2019	2020	2021



Project Alert – Scope, Schedule Budget Risk

- q Impacts to increased scope, schedule or budget is always a risk for any large infrastructure project.
- q Program risk mitigation approaches include:
 - Development of Risk Matrix (identify the risk, probability / severity, mitigative measures and contingency)
 - Independent Constructability Review for each tender package prior to issuance,
 - Independent HAZOP review for key Design package
 - Independent cost estimating of each tender package prior to issuance
 - Pre-qualification of general contractors for each tender package
 - Fairness Monitor retained for tertiary equipment selection



Project Alert – Construction Impact

- q **Constructor:** Three large contractors on one-site simultaneously , City will need to ensure they don't become 'Constructor' under OSHA. Need to ensure 'Time' and 'Space' between each contract
- q **Labour:** 200-300 construction workers at peak (where to park, security issues, site access, etc.)
- q **Trucking:** Excavation and concrete pours will increase truck traffic from 5 to 11 trucks per hour
- q **On-Site Impacts:** Internal road arteries will need to be managed to ensure no impact to Operations
- q **Coordination:** Biosolids P3 Contract and Water / Wastewater Upgrades will be on-going (WTP-Corrosion Control, Globe, Digester, Lab HVAC)


HAMILTON WATER
WATER IS LIFE

- Community
- People
- Processes
- Finance


Hamilton
Public Works

Rendering – New Entrance off Woodward



Rendering – New Main Pumping Station



- Community
- People
- Processes
- Finance



Hamilton
Public Works

Rendering – New Electrical and Stand-by Power Building

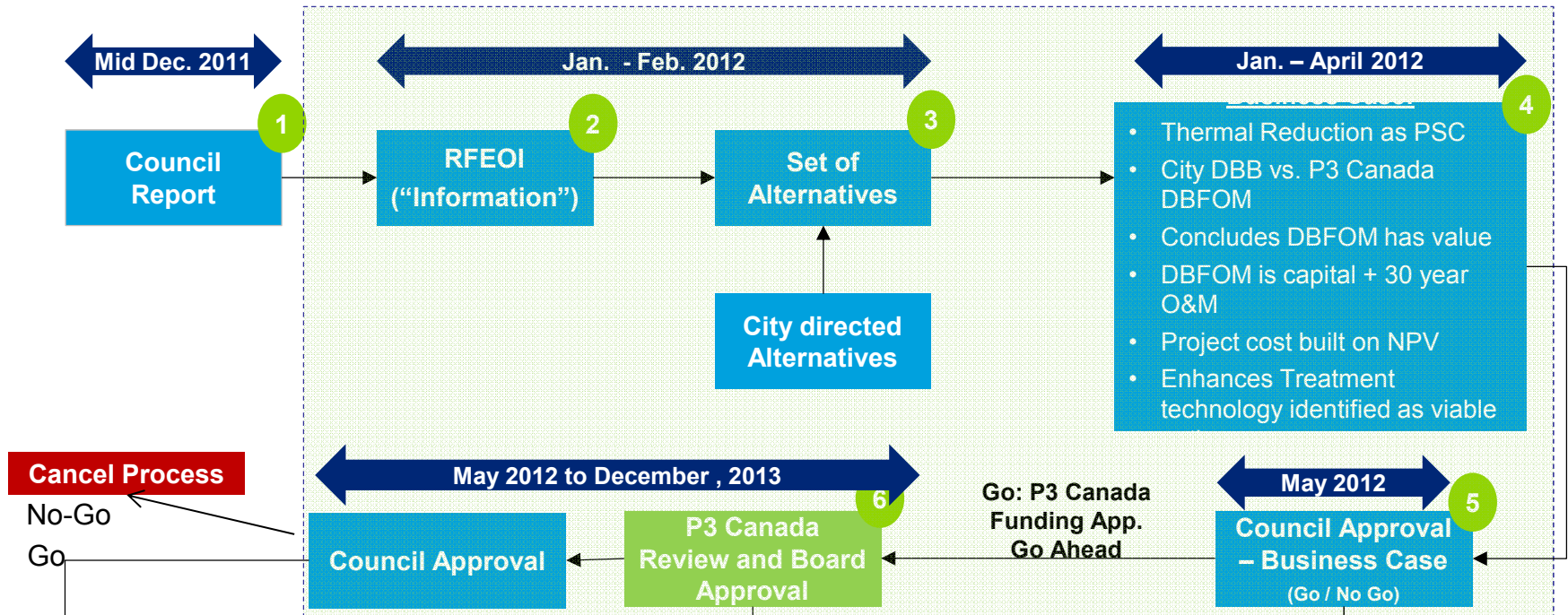


Biosolids Management Project (P3)

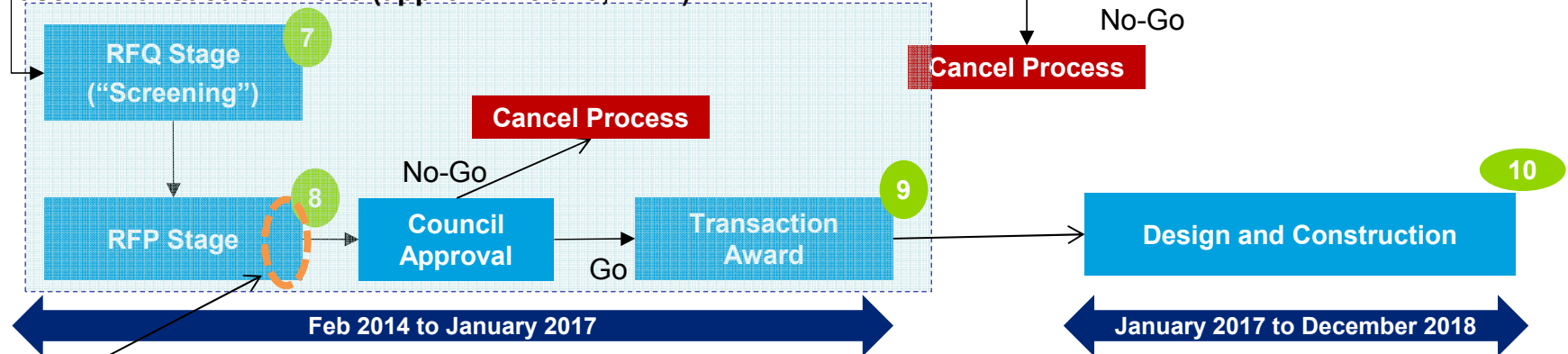


Biosolids Management Project – Process Overview

Phase 1: Business Case Phase



Phase 2: Transaction Phase (approval Feb 19, 2014)



Current Stage: Evaluating Submissions

Highlights

Objective: The Biosolids Management Project's objective is to retain a Biosolids Management Partner ('Project Co.') to process and manage the City's biosolids over a 30 year term in the most sustainable manner possible.

Highlights:

- DBFOM (Design-Build-Finance-Operate-Maintain) Project Delivery Model
- Proposed Term is 30 years,
- Site restricted to the Woodward Avenue WWTP,
- Technology open to Thermal Reduction or Enhance Treatment,
 - Enhanced Treatment

Medium capital (\$20-\$30M), medium O&M

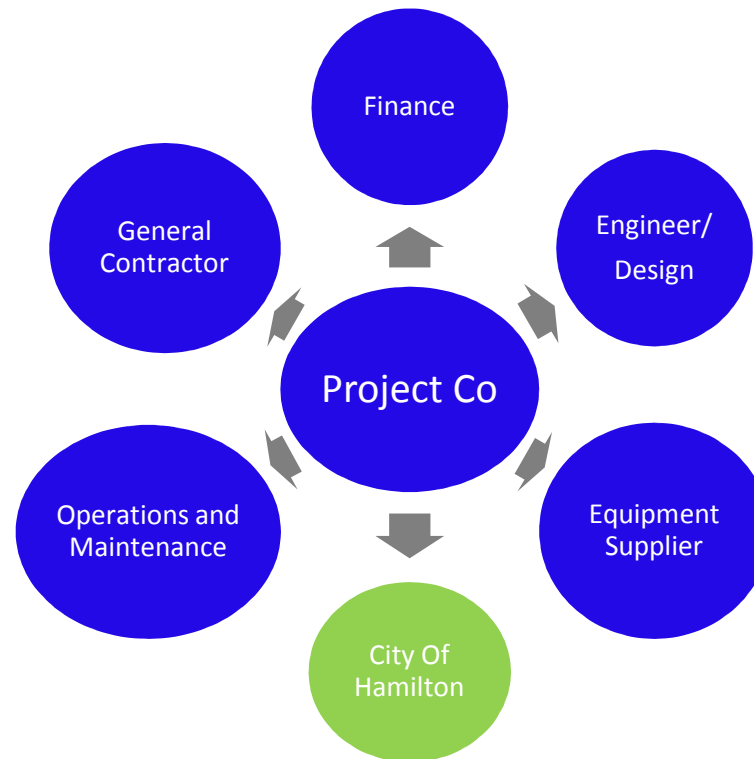
Commercial risks due to sale of end product – can be transferred to private sector
 - Thermal Reduction (incineration)
 - High capital cost (\$35-\$80M), lower O&M
- Project Affordability Cap is established



Biosolids Project Site

Biosolids Management Project

§ Delivery Model: Design – Build – Finance - Operate - Maintain (DBFOM)





Divisional Projects

Corrosion Control Program

Recent Achievements

- Council Approval – November 2015

Ongoing Work

- Capital Works for Corrosion Control Facility – 50% Pre-Design complete
- WTP Optimization Planning
- Baseline Monitoring Program
- Distribution System Planning
- Outreach Planning

Alerts

- Implementation in Q4 2018



Kronos

2016 Achievements

- Configuration, Training and Implementation across Hamilton Water
 - Integrated system
 - Real-time visibility
 - Time management
 - Labour tracking
 - Scheduling
 - Absence Management



Benefits

- Improve consistency
 - Application of CBA & HR Rules
- Minimize compliance risk
 - Legislative & Regulatory restrictions
 - Employment Standards Act
 - Highway Traffic Act



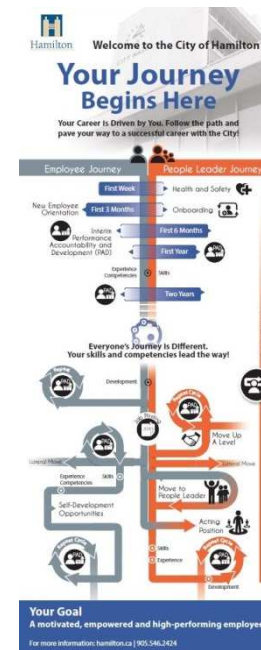
Divisional Priorities



Workforce & Succession Planning



HW Mentorship Program - Senior Project Manager HW



HW Leadership & Development Program



The Cutting Edge of Leadership

Process Improvement

Program Highlights

- Lead out of the Director's Office
- Embedding the knowledge into the way we do business
 - 30% Divisional participation
 - 12 Kaizen's
 - 8 Process Improvement Projects
- Performance Measurement

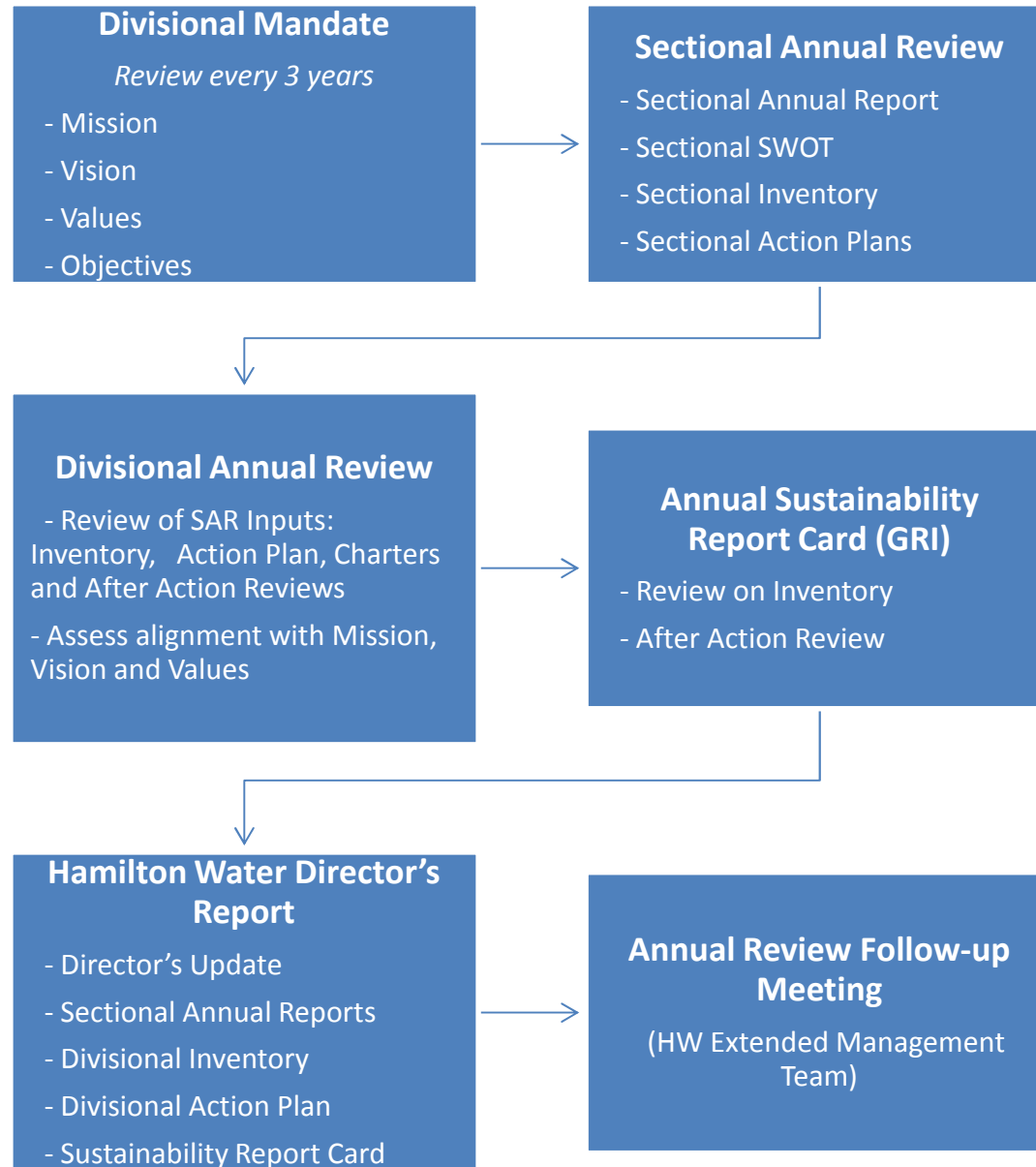


Next Steps

- Continual improvement of the Divisional Business Planning Process



Business Planning





Corporate Priorities

Communication

- Hamilton Water Annual Meeting
- Skip-Level Meetings
- Divisional Update videos
- RAP Website

Performance Measurement

- Metric and KPI development applied to Business Processes
 - Work Order Turnaround Time
 - Work Orders Completed Per Day
 - Locate Turnaround Time
 - # Hydrants Out of Service
 - Supervisor Site Visits per month

Continuous Improvement

- Embedded in DWQMS
- Lessons Learned sessions

Collective
Ownership

Steadfast
Integrity

Courageous
Change

Sensational
Service

Engaged
Empowered
Employees

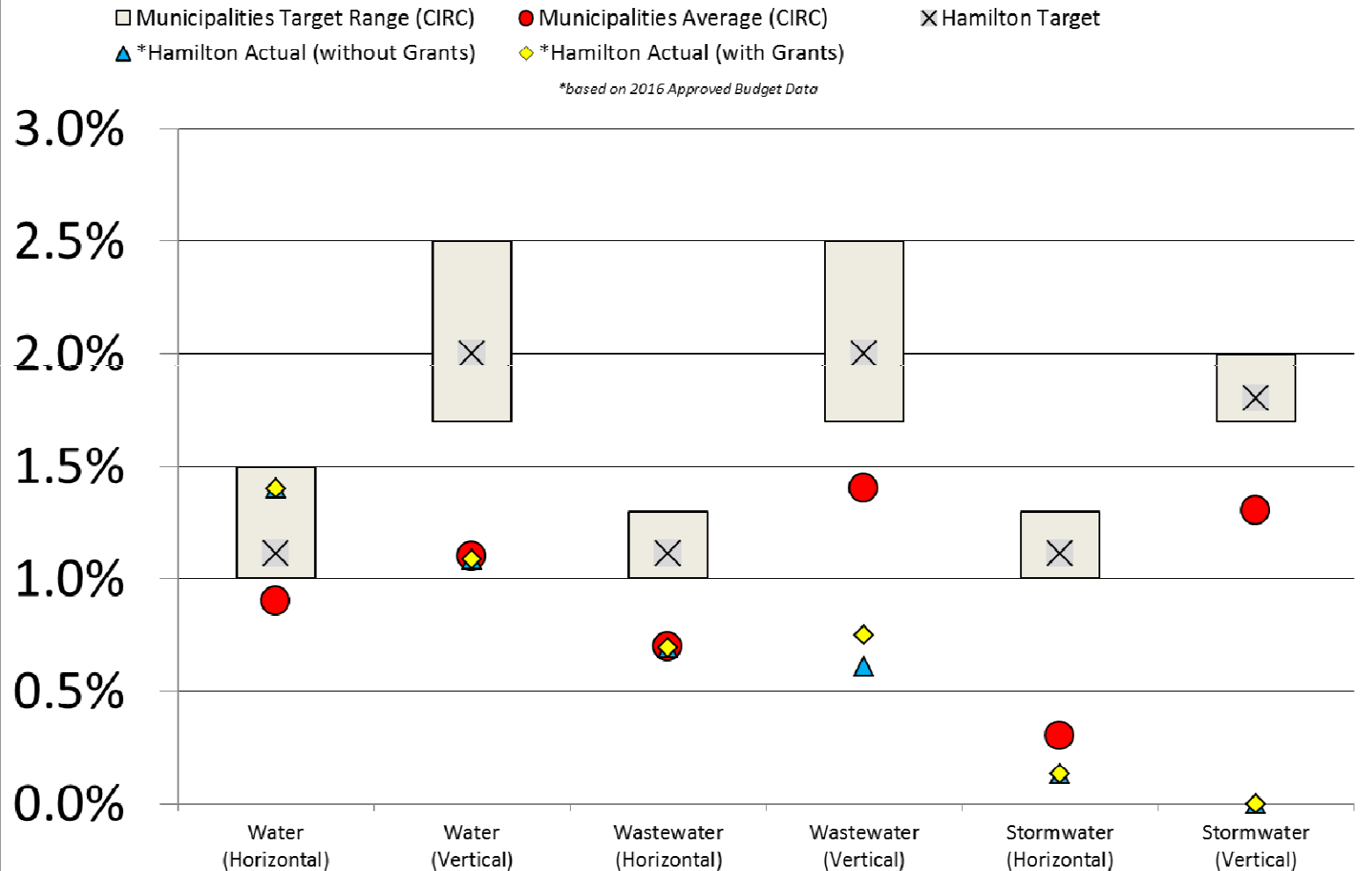


Hamilton
Public Works

Asset Management & Sustainability

Asset Management & Sustainability

5a. CURRENT INFRASTRUCTURE REINVESTMENT RATES Hamilton vs. Other Municipalities (Canadian Infrastructure Report Card)





Clean Water Wastewater Fund - CWWF

- Hamilton Water continues to leverage Government Funding programs to support Capital budgets
- The CWWF accelerates municipal W&WW infrastructure projects
- 75% cost recovery (50% Federal, 25% Provincial support)
- Hamilton Water Application submitted October 25th 2016
- 16 Projects include vertical and horizontal works
- Must spend \$43.9M to receive \$32.9M in financial support if accepted
- Infrastructure Ontario Acceptance notice expected February 2017





Asset Management & Sustainability

Recap

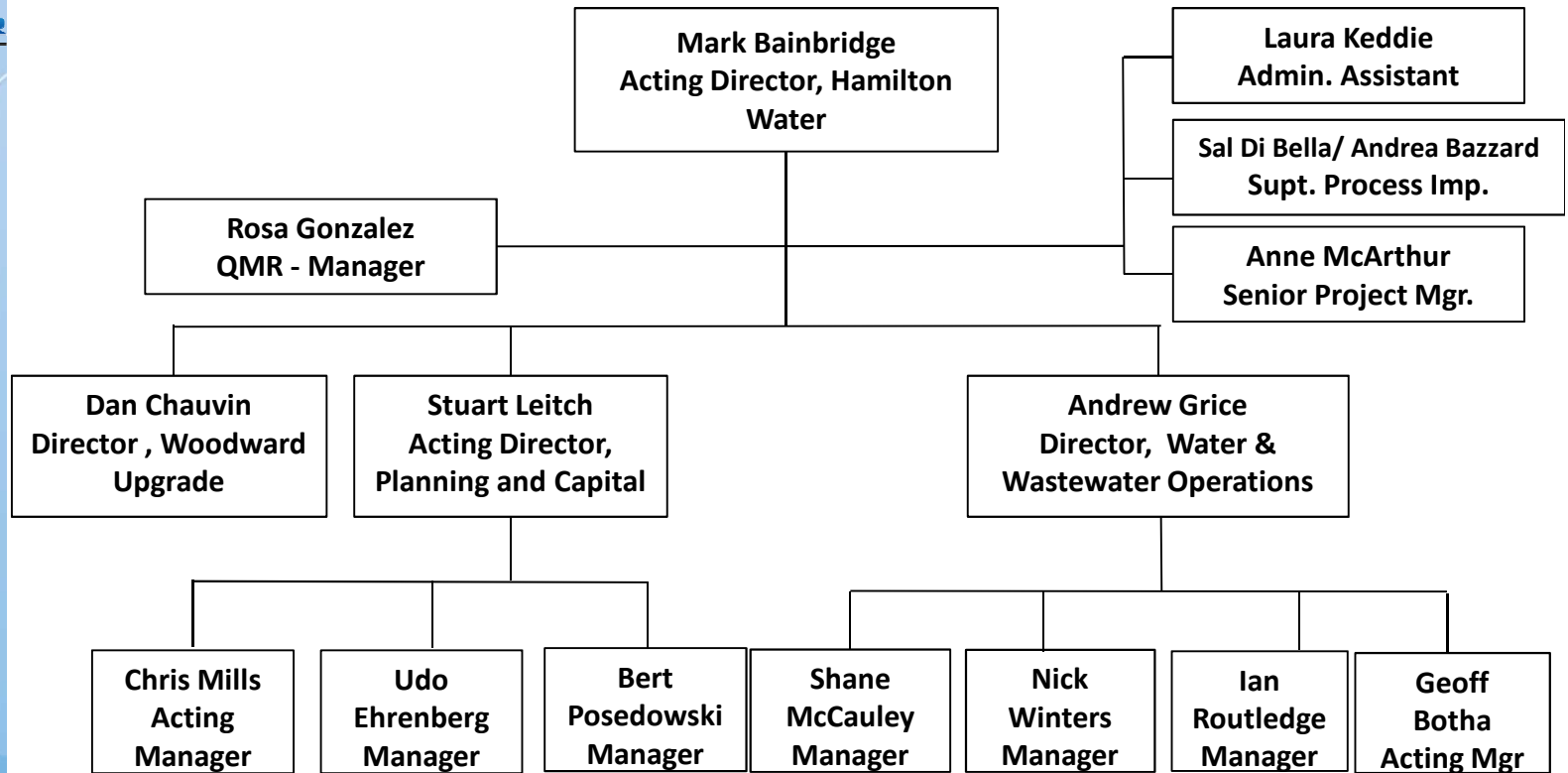
- Annual Summary Report – March 2016
“The approved plan anticipates an increase of 4.25 % per year for water rates as well as growth in demand that combined reflect an approximate increase of approximately 5.5% in water revenues. Lower community demand and revised rate forecast has delivered closer to 3.7% and as such a revised plan will be required that seeks to either increase revenues or revise the plan.”
- SOTI Update – July 2016
Program Challenges: Service Level Demands, Aging Infrastructure, Capital & Operating Funding, Growth & Intensification, Global Warming, Regulatory Requirements, Funding Shortfalls, Staffing

Alerts

- Revenues are dependant on consumption and therefore remain a risk going forward
- Unreliable Federal and Provincial funding
- Moving forward, we are working to develop a plan to reach sustainability

Staff Complement

Organizational Chart



Complement (F.T.E.)	Management	Other	Total	# of Staff / Management
2016	12.0	287.25	299.25	23.94
2017	12.0	293.25	305.25	24.44
Change	0	8.0	8.0	



Hamilton
Public Works



Resource Overview

Section		2017 Forecast	2017 Request	Year 2 (2018)	Year 3 (2019)	Year 4 (2020)	Year 5 (2021)
Planning & Capital	IP&SD	0	0	0	0	0	0
	Sustainable Initiatives	0	1	0	1	0	0
	Capital Delivery	0	0	0	1	0	0
Operations	CS&CO	0	0	1	0	0	0
	WD&WWC	2	3*	1	2	0	0
	Plant Operations	0	2*2020 ASK	1	0	4	0
	PMATS	0	2*2020 ASK	2	0	0	0
Compliance & Regulations		0	0	0	0	1	0
Woodward Upgrades & PMO Office		0	0	1	0	0	0
Total		2	8*	6	4	5	0
				23			

WOODWARD UPGRADES PROJECT SUPPORT

* 2 Project Manager's as referenced in Sewer Lateral Cross Connection Program Extension Council Report PW14028A

2017 Resource Request

Section	#	Job Title	Need
Plant Operations	1	Technologist	Support the Woodward Upgrade Project
PMATS	1	SCADA Technologist	Support the Woodward Upgrade Project
Plant Operations	1	Process Supervisor	Support the Woodward Upgrade Project
PMATS	1	Maintenance Operator	Support the Woodward Upgrade Project
Woodward Upgrades	4		
WD&WWC	1	Water Distribution Supervisor	Implementation of afternoon shift
Sustainable Initiatives	1	Admin Secretary	Support for 3 sectional teams
WD&WWC	2*	Project Manager	Sewer Lateral Cross Connection Program
TOTAL	8*		

* 2 Project Manager's as referenced in Sewer Lateral Cross Connection Program Extension Council Report PW14028A



2017 Resource Request

WOODWARD UPGRADES PROGRAM SUPPORT

Technologist, *Plant Operations*

- Review drawings and contract documents to develop standard operating procedures
- Update database with new assets and develop spares management program
- Coordinate ongoing plant maintenance activities and site access
- Develop plant wide H+S protocols during construction

SCADA Technologist, *Plant Maintenance & Technical Services*

- Review drawings and contract documents as they relate to SCADA
- Complete Factory Acceptance Testing and Site Acceptance Testing
- Develop process control narratives
- Create HMI for new processes

Process Supervisor , *Plant Operations*

- Lead the Clean Harbour Program Operational Readiness Team
- Responsible for maintaining operational compliance during construction
- Responsible for developing operating strategies during implementation of project
- Coordinate site activities for various operational staff during construction

Maintenance Operator , *Plant Maintenance & Technical Services*

- Maintain and operate the wastewater treatment controls
- Work with contractors to isolate treatment processes during construction



2017 Resource Request

Water Distribution Supervisor, *Water Distribution & Wastewater Collection*

- Leads a team of operators to maintain and construct water infrastructure
- Coordinates watermain locates, leak detection, and water turn ons /offs
- Responsible for regulatory lead testing and lead service line replacement programs
- Support capital asset replacement projects as water distribution technical lead

Admin Secretary, *Planning & Capital*

The Administrative Secretary will support the activities of 3 separate Planning and Capital staffing sections in Hamilton Water to improve communication, customer support, and optimize office workflow and functionality.

Project Managers, *Water Distribution & Wastewater Collection*

- To support the Sewer Lateral Cross Connection Program
- Coordinates and assists with wastewater maintenance capital projects
- *As referenced in Sewer Lateral Cross Connection Program Extension Council Report PW14028A*

Expenditures and Revenues





Expenditures

EXPENDITURE	2016 Restated Budget	2017 Base Budget	\$ Change	% Change
Employee Related Costs	\$33,652,380	\$35,549,180	\$1,896,800	5.6%
Materials and Supply	\$8,979,350	\$10,830,010	\$1,850,660	20.6%
Vehicle Expenses	\$1,116,790	\$1,158,880	\$42,090	3.8%
Building and Ground	\$15,464,250	\$16,447,970	\$983,720	6.4%
Contractual	\$19,446,250	\$20,037,050	\$590,800	3.0%
Agencies and Support Payments	\$2,724,500	\$3,379,600	\$655,100	24.0%
Reserves / Recoveries	-\$1,074,520	-\$454,450	\$620,070	-57.7%
Cost Allocations	\$5,595,040	\$5,710,120	\$115,080	2.1%
Financial	\$2,583,340	\$2,627,990	\$44,650	1.7%
Capital Financing	\$103,858,130	\$105,383,270	\$1,525,140	1.5%
TOTAL EXPENDITURES	\$192,345,510	\$200,669,620	\$8,324,110	4.3%

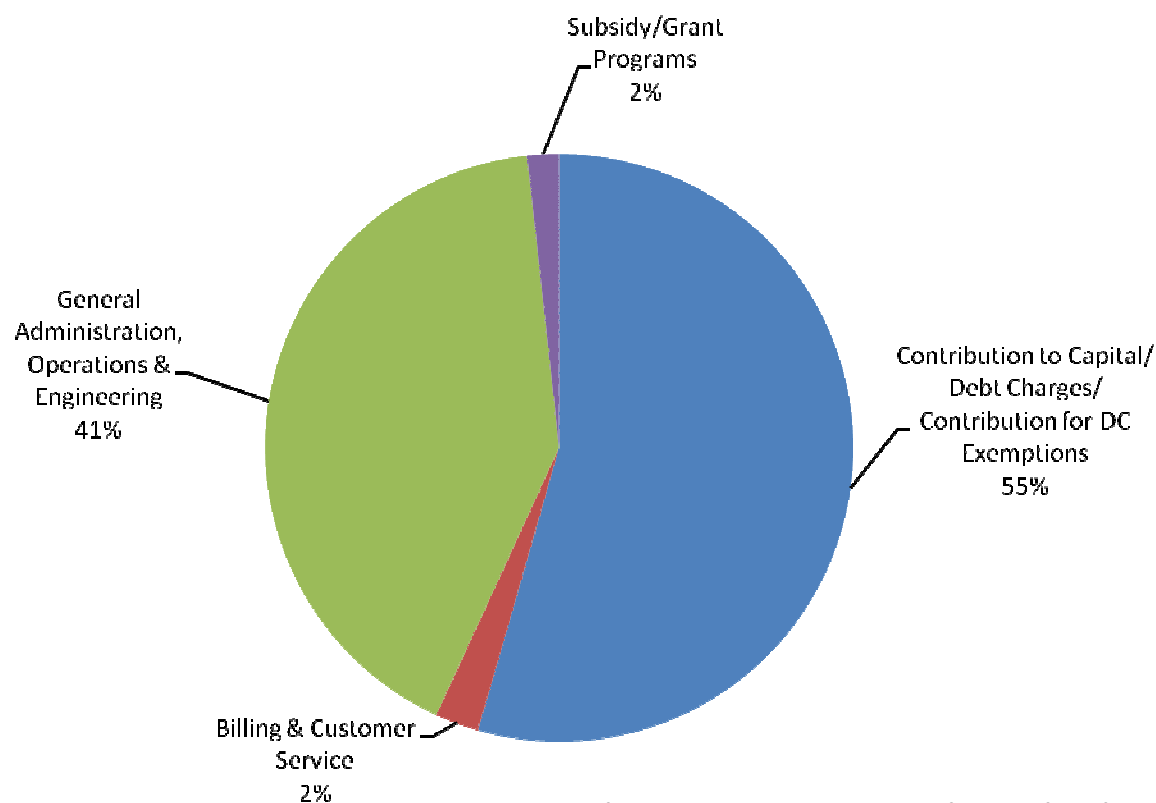
Revenues

REVENUES	2016 Restated	2017 Base Budget	\$ Change	% Change
Fees and General	\$2,299,010	\$2,526,650	\$227,640	9.9%
Rate Revenues	\$190,046,500	\$198,142,970	\$8,096,470	4.3%
TOTAL REVENUES	\$192,345,510	\$200,669,620	\$8,324,110	4.3%

Proposed 2017 Operating Budget

Recommendation:

That the 2017 Water, Wastewater and Stormwater Management Rate Supported Operating Budget in the amount of \$200,669,620 be approved as per Appendix “A” to FCS16079





Questions?

