

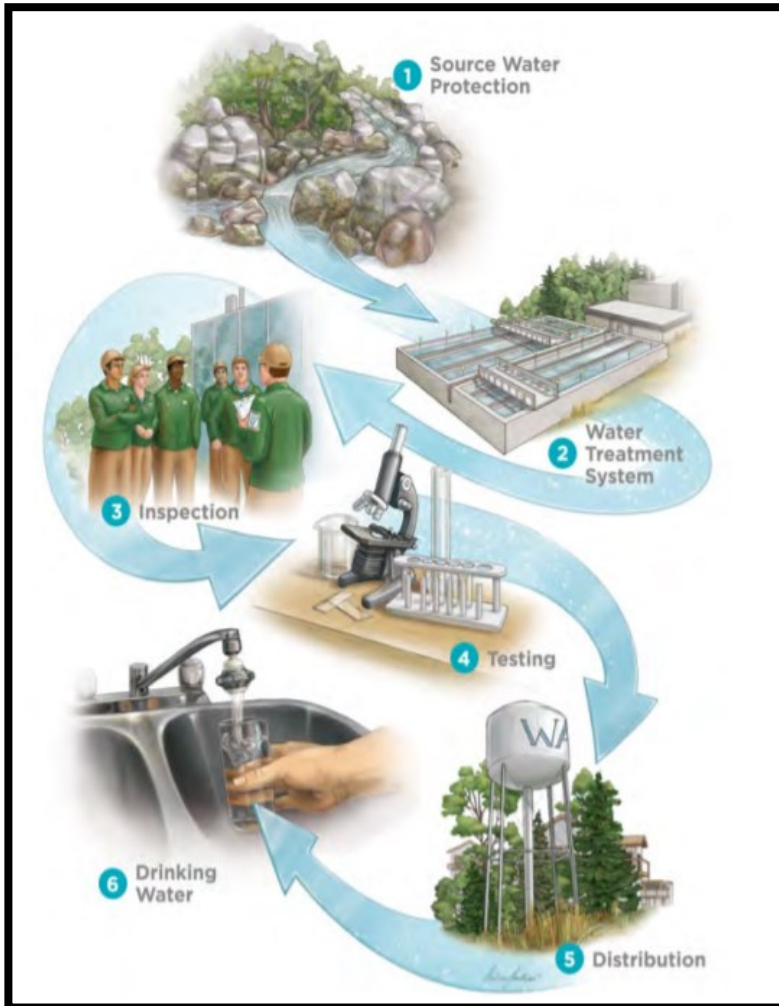


# **2021 RECOMMENDED WATER, WASTEWATER AND STORMWATER RATE SUPPORTED BUDGET**

**November 23, 2020**



# 2021 RATE BUDGET



Performance Metrics / Statistics

2020 Highlights

2020 Clean Harbour Program

Opportunities & Challenges

Future Outlook

Continuous Improvement

State of the Infrastructure

2021 Operating Budget





**Water Supply**  
**Water Distribution**  
**Water Support Services**  
**Infrastructure Management**



**Wastewater Treatment**  
**Wastewater Collection**  
**Wastewater Support Services**  
**Infrastructure Management**



**Stormwater Treatment**  
**Stormwater Collection**  
**Stormwater Support Services**  
**Infrastructure Management**

HAMILTON WATER – SERVICES AND SUBSERVICES



# PERFORMANCE METRICS / STATISTICS



# 2020 WATER FORECAST

1

WATER TREATMENT PLANT



77,812 ML TREATED

WHICH IS EQUAL TO 29% OF HAMILTON HARBOUR



DAY-TO DAY OPERATIONS AND MAINTENANCE OF

13,563

FIRE HYDRANTS


1,000

PIECES OF OUTREACH MATERIAL CREATED



21

WATER PUMPING STATIONS



4

WELL SYSTEMS

CARLISLE  
FREELTON  
GREENVILLE  
LYNDEN



13

RESERVOIRS

9

ACTIVE CONSTRUCTION PROJECTS

INCLUDING 5 SUBSTANTIALLY COMPLETED PROJECTS





158,413

WATER METERS

7


WATER TOWERS

2,110 km OF WATERMAINS



290

WATERMAIN REPAIRS



19,262

WATER TREATMENT PLANT SAMPLES TESTED

18,046

WATER DISTRIBUTION SAMPLES TESTED



8

SUPPORT AGENCIES WITH RESEARCH

750

SUBSTANDARD WATER SERVICE LINE REPLACEMENTS COMPLETED



# 2020 WASTEWATER FORECAST

**2** WASTEWATER  
TREATMENT PLANTS



**115,336 ML TREATED**  
WHICH IS EQUAL TO 42% OF  
HAMILTON HARBOUR

**300**

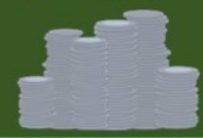
BACKWATER  
VALVES INSTALLED



ADDITIONAL SERVICES  
REVENUE (YTD)

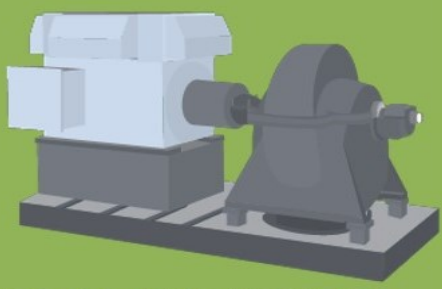
**\$ 6,421,000**

(78 ACTIVE  
PERMITS)



**71**

PUMPING STATIONS



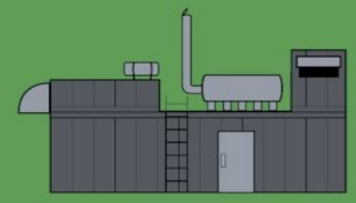
**9**

COMBINED SEWER  
OVERFLOW  
TANKS



**8,015**

MEGA WATT HOURS  
ELECTRICITY  
PRODUCED



**11**

ACTIVE  
CONSTRUCTION  
PROJECTS



INCLUDING **7**  
SUBSTANTIALLY  
COMPLETED  
PROJECTS

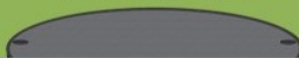
**1,202 km**  
SANITARY SEWER

**571 km**  
COMBINED  
SEWER

**40,299**

TONNES OF  
BIOSOLIDS PROCESSED  
ON SITE

**25,503**  
MANHOLES



**49,258**

WASTEWATER  
SAMPLES TESTED

**13,106**

ENVIRONMENTAL  
SAMPLES TESTED



**1,376**

DEVELOPMENT  
APPLICATION  
REVIEWS (YTD)

**\$4.4**  
MILLION

COST  
AVOIDANCE  
(YTD GLOBAL  
ADJUSTMENT)



**TOTAL WASTEWATER ASSETS - \$5.39 BILLION**





# 2020 STORMWATER FORECAST



**1,586,424 m<sup>3</sup>**

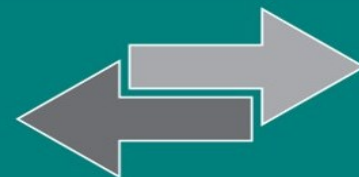
STORMWATER STORAGE CAPACITY

**1,231 km** OF STORM SEWER

SHORELINE  
ASSETS

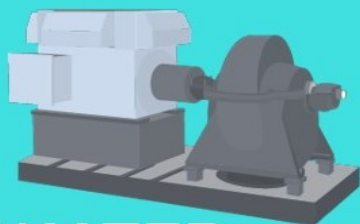
**630M**

AT 29  
LOCATIONS



**72** OIL & GRIT  
SEPARATORS

**2**



STORMWATER  
PUMPING STATIONS

**148**

KILOMETRES OF  
WATERCOURSES

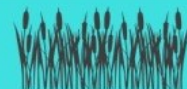


**57** KILOMETRES  
OF MUNICIPAL DRAINS



DRAINAGE  
EASEMENTS

**5**



WETLANDS

**74**

WET PONDS



**60**

DRY PONDS



**438**

EMERGENCY  
SPILLS  
ACTIVATIONS  
(YTD)



**2021**



FLOODING &  
DRAINAGE MASTER  
SERVICING STUDY



**1,465**  
RAIN  
BARRELS  
SOLD



# 2020 SYSTEM PERFORMANCE

## DUNDAS WWTP



**4,451ML**  
wastewater  
treatment  
forecast



continuous  
compliance with  
wastewater  
effluent limits

## WOODWARD WTP



**77,812ML**  
water treatment  
forecast



**AWQI**  
11 confirmed  
3 unconfirmed



**\$4.40M**  
cost avoidance  
YTD global  
adjustment

## WOODWARD WWTP



**110,885ML**  
wastewater  
treatment forecast



**74%**  
capacity utilization

**40,299** **TONNES**

biosolids processed on site  
forecast



**8,015**  
mega watt hours  
generated by Cogen unit



continuous  
compliance with  
wastewater  
effluent limits



**43,061**  
gigajoules  
generated by Bio-gas  
Purification Unit (YTD)



**9**  
Plant bypasses YTD



**8**  
odour  
complaints



# 2020 HIGHLIGHTS





## STRATEGIC PLAN OUR PRIORITIES

### •COMMUNITY ENGAGEMENT & PARTICIPATION

- Hamilton has an open, transparent, and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

### •ECONOMIC PROSPERITY AND GROWTH

- Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

### •HEALTHY & SAFE COMMUNITIES

- Hamilton is a safe and supportive city where people are active, healthy, and, have a high quality of life.

- 

### •CLEAN & GREEN

- Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

### •BUILT ENVIRONMENT & INFRASTRUCTURE

- Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

### •CULTURE & DIVERSITY

- Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

### • OUR PEOPLE AND PERFORMANCE

- Hamiltonians have a high level of trust and confidence in their City government.



# 2020 HIGHLIGHTS

## WASTEWATER QUALITY MANAGEMENT SYSTEM POLICY



The City of Hamilton owns, maintains and operates various wastewater systems. The City is committed to:

- C** Compliance with all legal and other requirements
- L** Leaders in pollution prevention
- E** Effective Communication with the community
- A** Always improving the Wastewater Quality Management System
- N** Noteworthy innovation



## Implementation of wastewater quality management system (WWQMS)

- ❖ Operational plan and update in December 2020
- ❖ Policy (C.L.E.A.N) developed through Staff competition
- ❖ Wastewater compliance audit – March 2020
- ❖ First internal audit – Q1 2021





# 2020 HIGHLIGHTS



## Community and stakeholder engagement Initiatives

- ❖ From 3P's to F.O.G (Fat's, Oil's and Grease's)
- ❖ Combined sewer overflow and wastewater treatment plant bypass public facing map
- ❖ Trust and confidence and service profiles
- ❖ 2020 divisional report

## Infrastructure performance

- ❖ Watermain performance (C-factor testing)





# 2020 HIGHLIGHTS



## Capital construction performance

- ❖ \$126.7M – Forecasted on 2020 capital construction expenditures for 2020
- ❖ 11 Vertical capital construction projects complete in 2020
  - AEGD pumping stations (2 of 3 stations)
  - Stone Church & Garth reservoir HDR05 phase 1 upgrades
  - Decommissioned Waterdown wastewater plant
  - Primary digester #4 clean out and interior sealing
  - New Lynden well system





# 2020 HIGHLIGHTS – P3 BIOSOLIDS PROJECT



## Substantial performance of P3 Biosolids Facility

- ❖ Substantial performance May 11, 2020
- ❖ Delivered through Public-Private-Partnership model
- ❖ 30 Year operating, maintenance and rehabilitation phase with Harbour City Solutions
- ❖ 60,000 wet tonne per year processing facility
- ❖ Produces a fertilizer product registered under the Canadian Food Inspection Agency or can be used as a fuel source







## Citizen facing programs

- ❖ Protective plumbing program (backwater valves)
  - Rostered contractor model continues to be a success
  - 10,833 valves installed since 2009 - \$24.1M spent towards program
- ❖ Sewer lateral management program
  - Upgrade of aged residential sewer service lines
  - 511 inspections (YTD) – spot repairs, replacement or lining
  - Approximately \$1.7M invested in 2020
- ❖ Substandard water service replacement program (lead services)
  - 615 services replaced (YTD)
  - 1251 size & type inspections (YTD)
  - Approximately \$2.34M invested in 2020
- ❖ Corrosion control program
  - Program launched November 2018
  - No water quality issues observed / reported
  - Project underway to assess program maturity
  - Decreasing trend in lead levels at tap



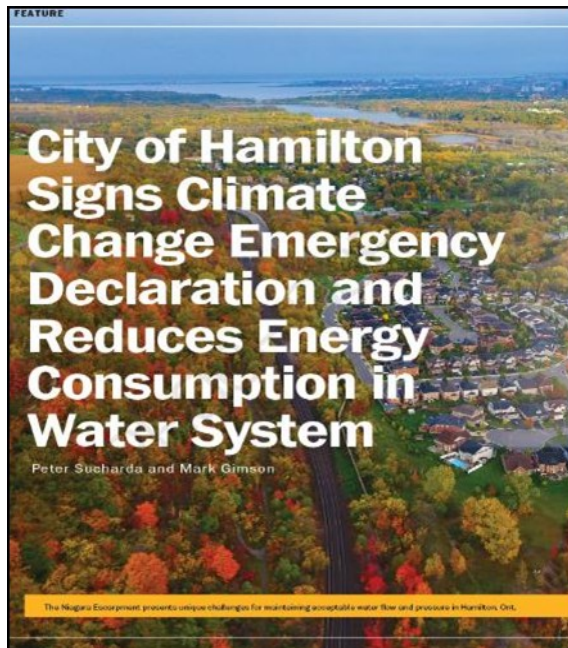
# CLIMATE CHANGE IMPACTS



- ❖ Hamilton Water is one of the City's largest energy consumers - \$11M annually
- ❖ Energy efficiencies are incorporated into all capital rehabilitation projects
  - High efficiency pumps and motors
  - LED lighting
- ❖ \$674M in total capital investment, driven by growth and infrastructure needs, that address energy efficiencies and mitigate flooding

## Examples of projects benefiting climate change:

- ❖ Anti stagnation valve program (3.1MWh / \$400,000 reduction)
- ❖ Biosolids P3 facility product has reduced trucking volumes
- ❖ West Mountain inflow and infiltration study
- ❖ Climate change asset impact study with GTHA municipalities
- ❖ Proactive leak detection
- ❖ Municipal natural asset inventory
- ❖ Review and update of the intensity-duration-frequency curve







# Hamilton CLEAN HARBOUR P R O G R A M

For more information, please visit our website at:

❖ [www.hamilton.ca/cleanharbour](http://www.hamilton.ca/cleanharbour)

For a video update of the Woodward Upgrades Project, please visit our website at:

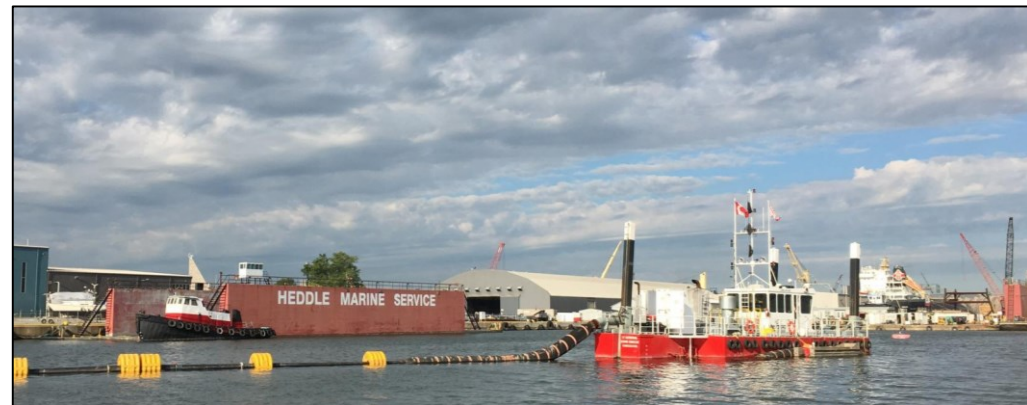
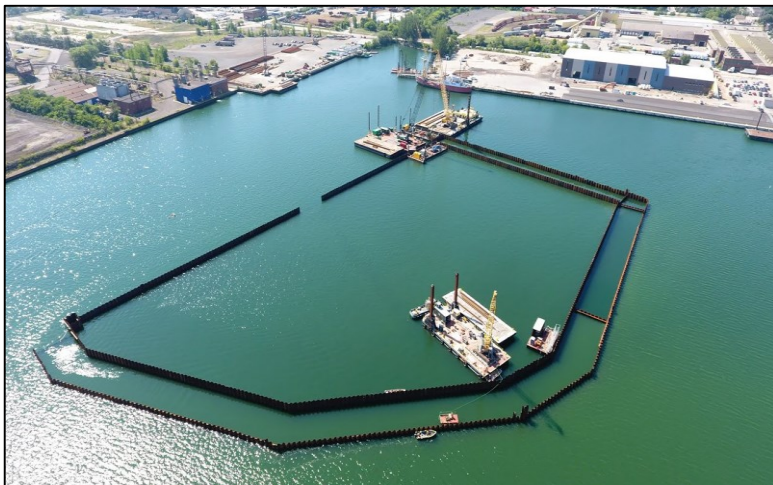
❖ <https://www.hamilton.ca/city-initiatives/our-harbour/woodward-upgrades-sub-projects>



# 2020 HIGHLIGHTS - RANDLE REEF

## Project update by phase

- ❖ Phase 1: double celled sheet pile wall containment facility
  - Complete
- ❖ Phase 2: dredging of contaminated sediment
  - Underway – 70% complete (mid October)
  - 272,000m<sup>3</sup> removed to date
- ❖ Phase 3: dewatering and capping of contaminated material
  - COVID-19 could delay tendering to 2021
  - Expected to be complete in 2022/23





## Contract 1 – Main Pumping Station (MPS)



Contract value: **\$87.6 Million**

Construction began: **May 2017**

Substantial completion: **June 2021 (contract) + 6 months = Dec 2021**

Work performed to September 2020: **\$70.7 Million (80%)**

## Contract 2 – Electrical Upgrades (ELU)



Contract value: **\$60.9 Million**

Construction began: **October 2017**

Substantial completion: **June 2021 (on schedule)**

Work performed to September 2020: **\$55.5 Million (91%)**

## Contract 3 – Tertiary Treatment (TTU)



Contract value: **\$165.3 Million**

Construction began: **May 2019**

Substantial completion: **Dec 2021 (contract) + 7 months = July 2022**

Work performed to September 2020: **\$69.3 Million (41%)**



CONTRACT 1 – MPS

CONTRACT 2 – ELU

CONTRACT 3 – TTU

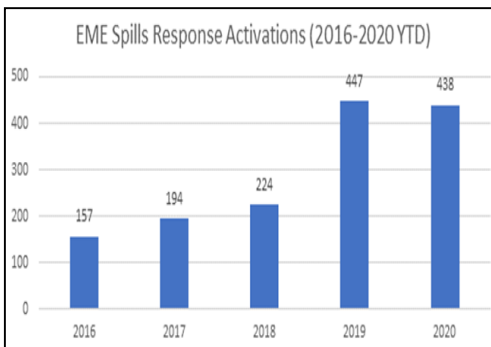




# OPPORTUNITIES AND CHALLENGES



# 2020 CHALLENGES & OPPORTUNITIES



## Regulatory challenges

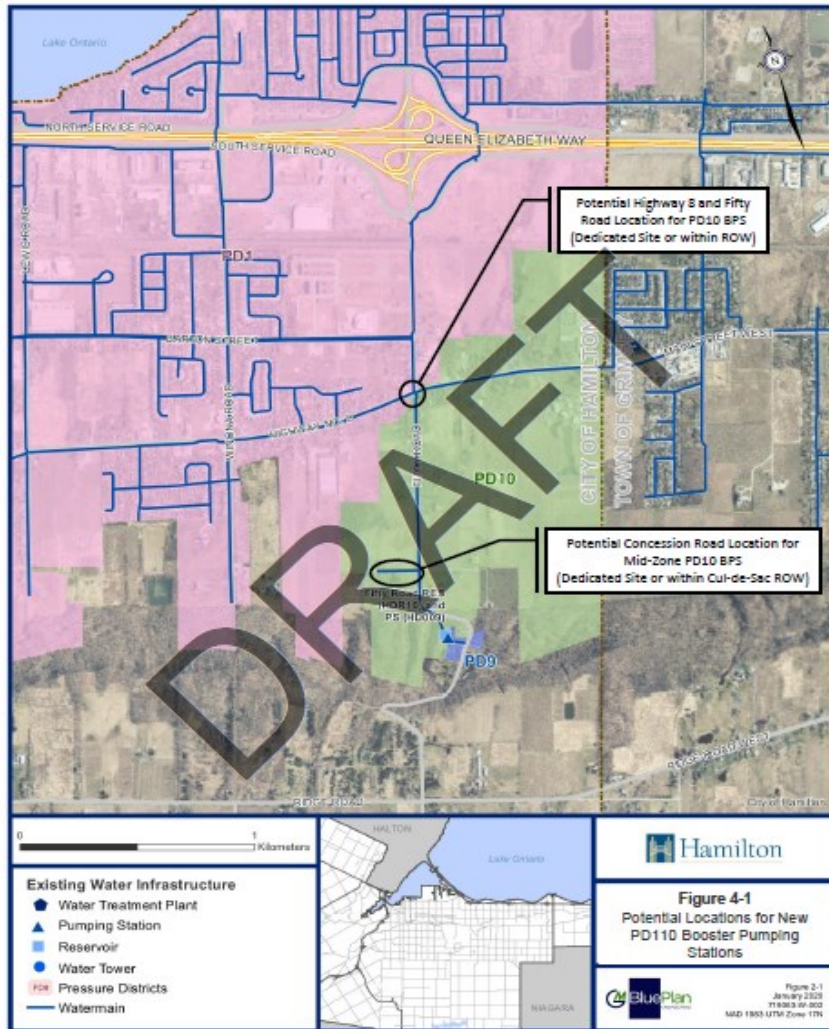
- ❖ Watermain disinfection procedure
- ❖ F-5-5 compliance
- ❖ Allocation capacity – combined system
- ❖ Stormwater source control enforcement
- ❖ Construction dewatering
- ❖ On-site and excess soil management O. Reg 406/19
- ❖ Area wide linear wastewater and stormwater collection environmental compliance approvals

## Operational impacts

- ❖ Short term (2-3 year) capital rehabilitation repairs
- ❖ Utility encroachments
- ❖ High lake water levels
- ❖ COVID-19 service impacts
- ❖ Reported spills and response



# 2020 CHALLENGES & OPPORTUNITIES

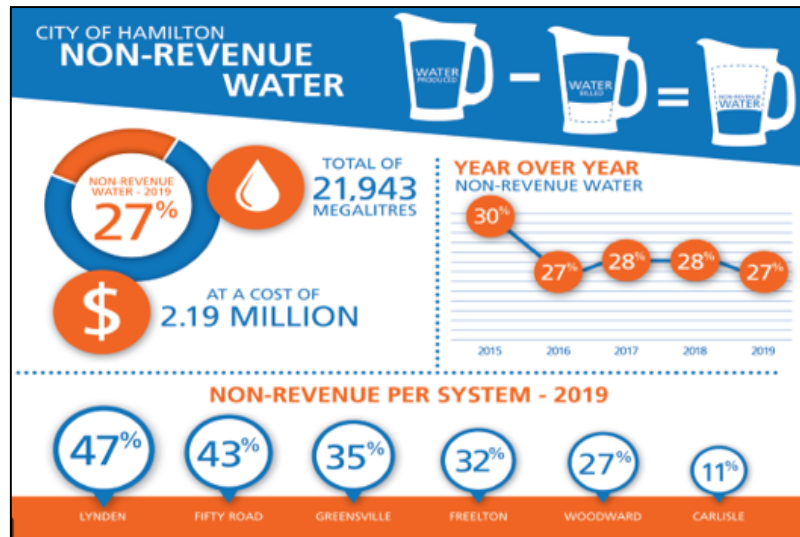


## Fifty Road drinking water supply

- ❖ Section of Stoney Creek has drinking water supplied from the Grimsby water system
- ❖ 2020 study recommend converting system to Hamilton supply
  - Current rate structure for Grimsby supply - \$2.77/m<sup>3</sup>
  - Project construction estimate - \$1.0M to \$1.4M
  - Payback period is approximately 14 years
  - Provides full control of the drinking water system



# 2022 – 2025 CHALLENGES & OPPORTUNITIES

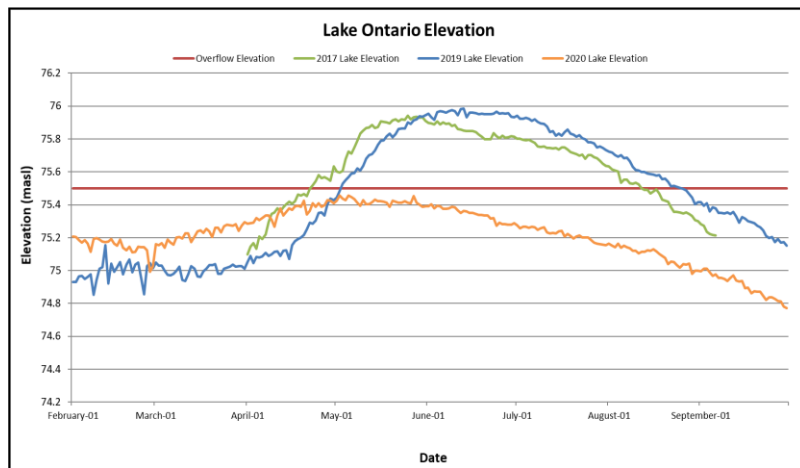


## System governance

- ❖ Low impact development governance (public, private and enforcement)
- ❖ Provincial changes to drinking water regulatory limits (ex. lead)
- ❖ Municipal responsibility agreements

## System performance

- ❖ Above average non-revenue water ratio and proactive leak detection
- ❖ Climate change – high intensity precipitation, elevated lake levels, frozen services, algae blooms
- ❖ Dundas wastewater treatment plant upgrades – funding





# CHEDOKE CREEK RESPONSE



## Actions complete

- ❖ Studies and assignments
  - Chedoke Creek ecological risk assessment
  - Cootes Paradise environmental impact evaluation
  - Floatables study
  - Hatch facility inspection study
- ❖ Community engagement
  - Combined sewer overflow bypass notification website
  - Combined sewer overflow video

## Ongoing actions

- ❖ Studies and assignments
  - Chedoke water quality improvement study
  - Combined sewer outfall monitoring feasibility study
- ❖ Creation of watershed management committee

## Future actions

- ❖ Real time control phase 2 – 2021 construction
- ❖ Capital implementation plan from watershed management committee

**Represents \$7.7M in work related to Chedoke Creek and Cootes Paradise**



# CHEDOKE CREEK RESPONSE



## Resources approved in 2020 rate budget

- ❖ 1 Water Quality Technologist – surface water quality program
  - Gap analysis for current monitoring activities
  - Draft framework – external stakeholder review Q1 2021
- ❖ 4 Maintenance Operators – enhanced combined sewer overflow facility inspection
  - Inspections complete at 22 locations (e.g. 7 combined sewer overflow tanks, sluice gates, regulators)
  - Proactive repairs and equipment replacement
  - Focus on critical control points





# CHEDOKE CREEK ORDER UPDATE

- ❖ Provincial Officer's Order issued to the City on Friday November 20, 2020
- ❖ Order posted on the City website – [www.hamilton.ca/chedokecreek](http://www.hamilton.ca/chedokecreek)
- ❖ The order requires the City to undertake remedial action for Chedoke Creek and Cootes Paradise
  - Targeted dredging plan for Chedoke Creek
  - Strategy for water quality improvements in Cootes Paradise
- ❖ City staff continue to work collaboratively with the Ministry and share the common goal of environmental improvement



# FUTURE OUTLOOK



# MAJOR INITIATIVES 2021



## Organizational

- ❖ Stormwater program review
- ❖ By-law updates
  - Sewer use by-law – update
  - Waterworks by-law – update

## Operations

- ❖ Advanced metering infrastructure for ICI facilities and remaining well communities
- ❖ Non revenue water initiatives – proactive leak detection
- ❖ Lead service line replacements
  - Contractor and staff delivery model – cost savings
  - Review of accelerated delivery model

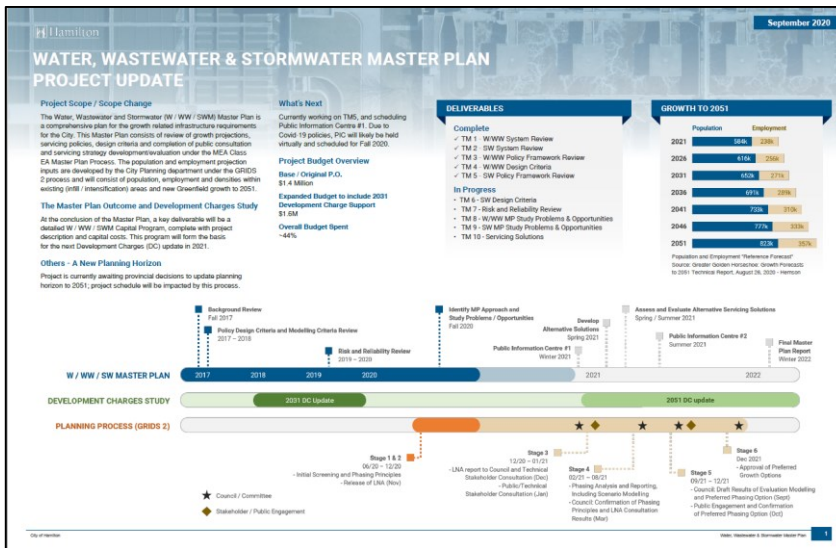




# MAJOR INITIATIVES 2021

## Planning & capital initiatives

- ❖ Water, wastewater and stormwater master plan
- ❖ Asset management readiness – O. Reg 588/17 and vertical asset management program
- ❖ Environmental assessments
  - Carlisle water storage
  - Waterdown trunk watermain twinning
  - Ancaster water servicing
  - Beach neighbourhood drainage environmental assessment
- ❖ Design and construction projects
  - Pressure district 7 water tower (Ward 11)
  - AEGD wastewater pumping station (Twenty Rd.)
  - Real time control - phase 2
  - Greenhill combined sewer overflow facility





# MAJOR INITIATIVES 2022 TO 2024



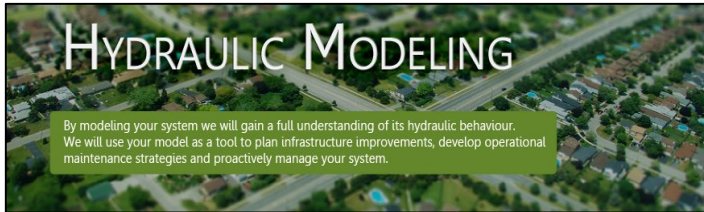
## Planning & capital initiatives

- ❖ Water treatment plant process upgrades
- ❖ Mountain waste hauler station design
- ❖ Dundas wastewater treatment plant upgrades





# MAJOR INITIATIVES 2022 TO 2024



## Organizational

- ❖ Facility plan for Woodward wastewater treatment plant
- ❖ Water / wastewater / stormwater / groundwater modelling
  - Model updates and calibration
  - Undertaking flow monitoring activities
  - Establishment of master model procedures
  - Assessing integration of growth information

## Operations

- ❖ Integration of WUP infrastructure
  - Commissioning and transfer to operations
  - Develop preventative maintenance program



# CONTINUOUS IMPROVEMENT

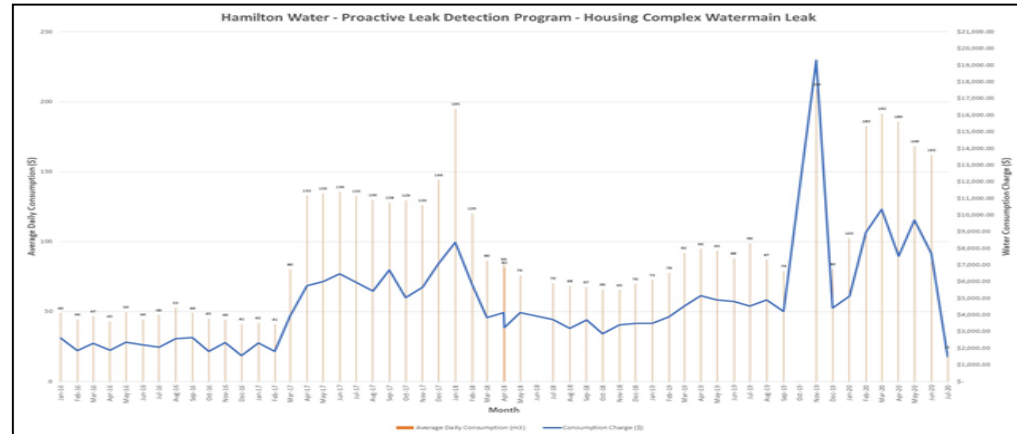


# CONTINUOUS IMPROVEMENT HIGHLIGHTS



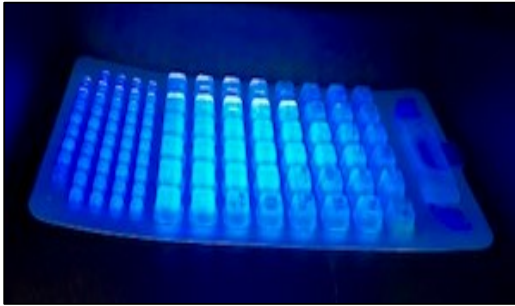
## Proactive leak detection

- ❖ 140 leaks (23% private leaks)
- ❖ Leak detection of over 400 km of watermain
- ❖ Major leaks previously undetected
  - ❖ 564 Stone Church – 463,000 l/d
  - ❖ 617 Scenic Dr – 397,000 l/d
- ❖ Financial benefits
  - ❖ Direct energy savings
  - ❖ IESO incentive program





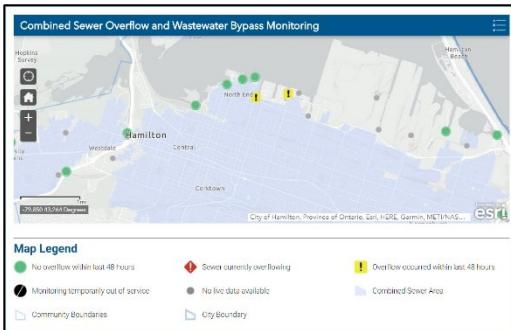
# CONTINUOUS IMPROVEMENT HIGHLIGHTS



## Process oriented

### ❖ Enzyme substrate method for microbiological analysis

- Implemented in February 2020
- Accreditation to ISO17025:2017
- 18hr vs 24hr incubation period
- Interference elimination – AWQIs
- Less staff time required to run analysis



### ❖ Combined sewer overflow (CSO) bypass notification

- Visual of CSO locations and current/recent overflows
- Provides volumes and historical information
- Promotes transparency of our operations

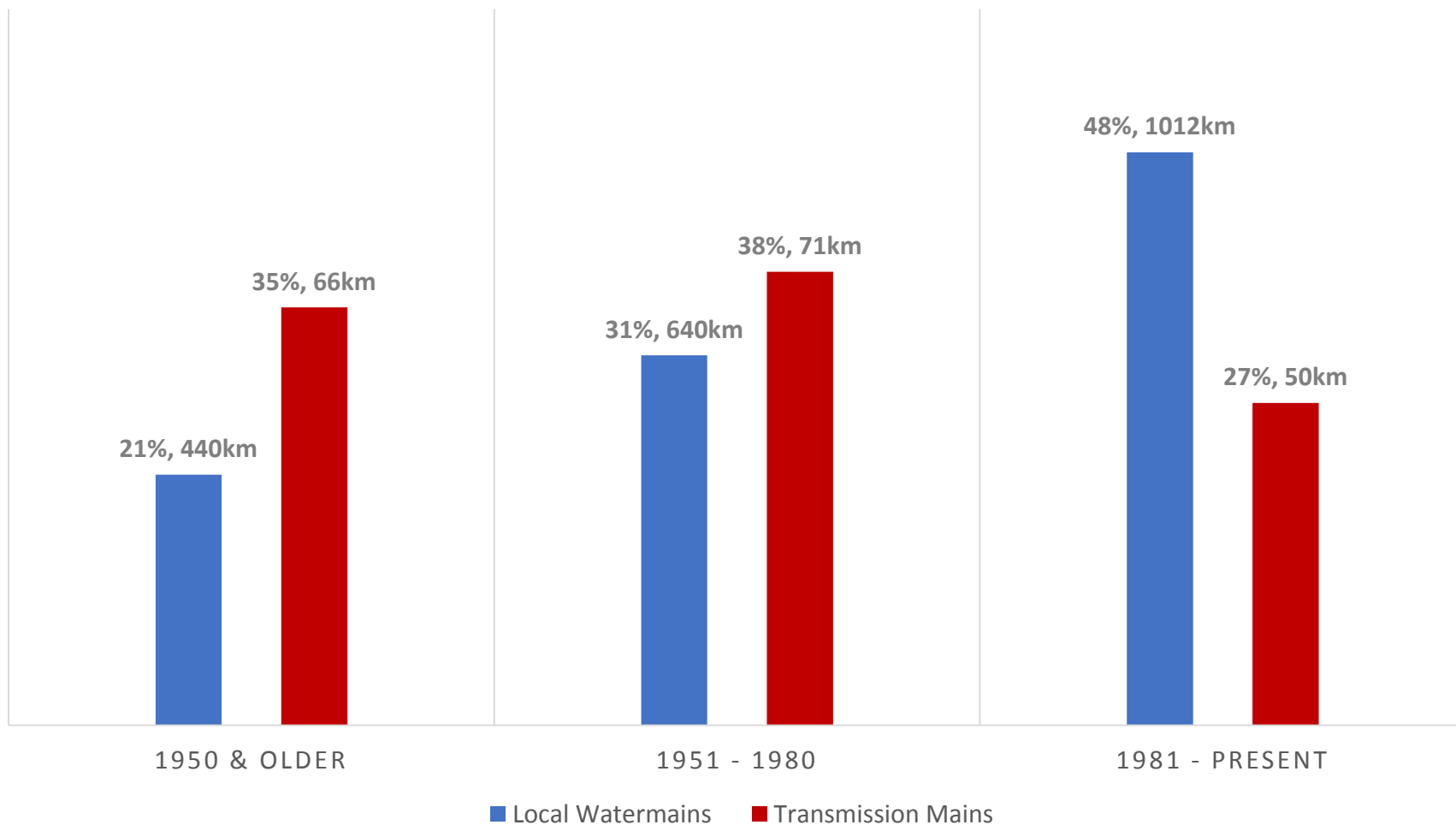




# STATE OF THE INFRASTRUCTURE



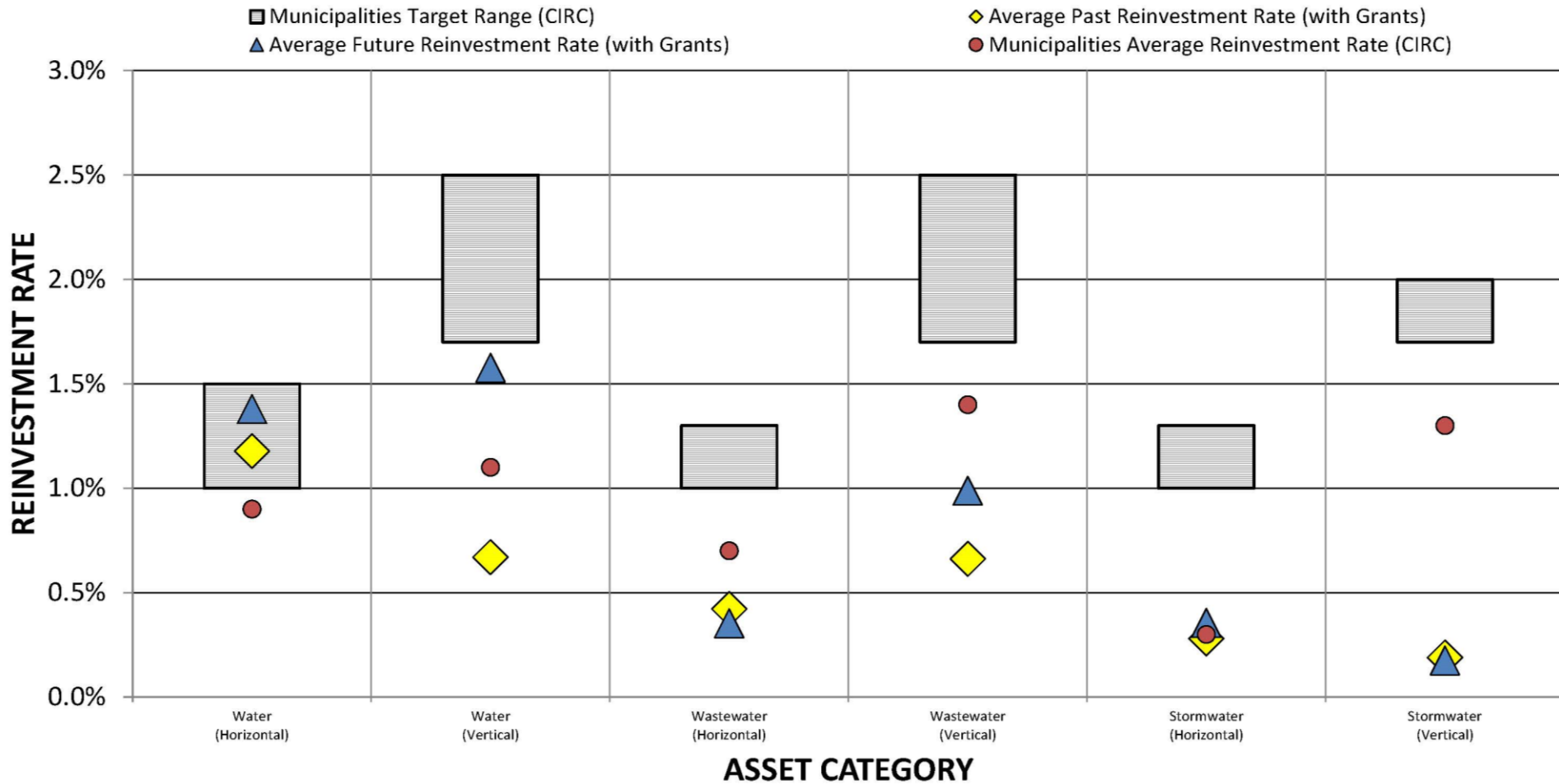
# WATERMAIN AGE PROFILE



9% of the distribution network is transmission watermain (450mm and larger)



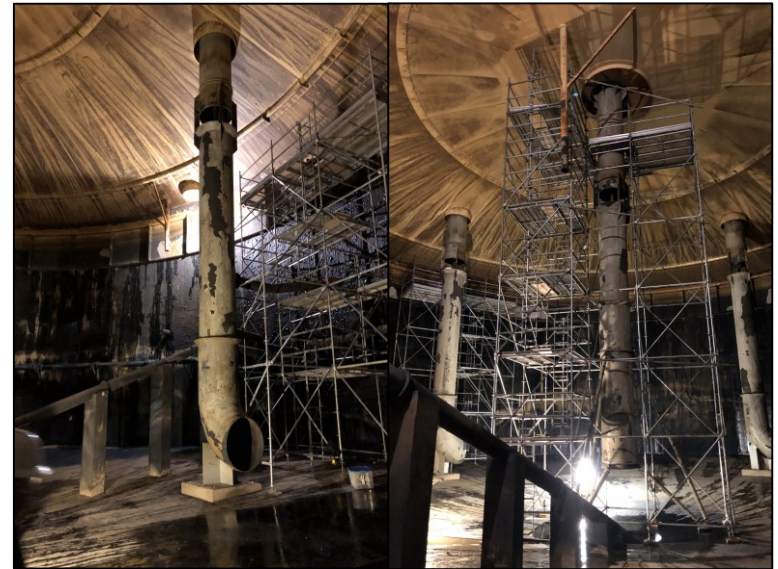
# INFRASTRUCTURE REINVESTMENT RATE COMPARISON



*Past 5-year Capital Approved Budget Average (2016-2020) and Future 10-year Capital Rates Budget Average (2021-2030) includes Grants.  
Approved Budget includes investment to existing infrastructure (excludes Maintenance, System Enhancement and Growth).*



# STATE OF VERTICAL INFRASTRUCTURE



Clearwell at Woodward WTP (1931) / expanded (1973)  
Capital repairs \$4.5M / Asset value \$36.5M

North Digester Complex at Woodward WWTP (1964)  
Capital repairs \$23.7M + life cycle replacement value \$62.4M



# GENERAL SYSTEM FAILURES



**Watermain break – Main St.**



**Sewer lateral damage – Markland St.**



**Sanatorium SW inlet / outlet – Rice Ave.  
& Sanatorium**



**Watermain break – Waterdown (Dundas St.)**



**Regulator repair – Campbell Ave/Fraser Ave.**



**Chedoke SW inlet / outlet – near  
Chedoke golf course**



# SIGNIFICANT WATERMAIN BREAKS

## Watermain breaks outside the roadway - \$1.75M



249 York Rd - Dundas  
\$690,249



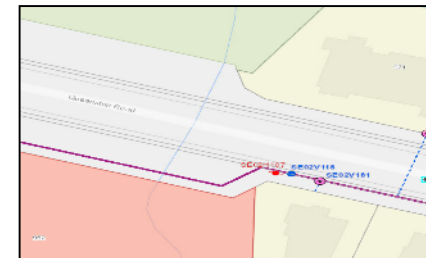
329 Mill St – Dundas  
\$280,028



Red Hill Creek  
\$181,208



118 Guildwood - Hamilton  
\$394,242



952 Queenston Rd – Stoney Creek  
\$183,490





# KENILWORTH RESERVOIR – CONTAMINATED SOILS



OPTION 1 – REMOVE/REPLACE CONTAMINATED SOILS		OPTION 2 – REUSE CONTAMINATED SOILS	
PRO'S	CON'S	PRO'S	CON'S
Minimizes any future water quality issues	High cost – removal and replacement	Low cost – reuse of Soils	Potential future water quality risks
Reduces operational burden of more frequent interior reservoir inspections	-	-	More frequent interior reservoir inspections
Community acceptance – no contaminated soil on a drinking water reservoir	-	-	Community acceptance – contaminated soil on a drinking water reservoir
Reduces drinking water testing requirements	-	-	Increases drinking water testing costs
<b>COST</b> - Up to \$6.5M to remove contaminated soils and replace with clean fill		<b>COST</b> - \$200,000 to \$300,000 / year	
<b>FUNDING SOURCE</b> – Reserves		<b>FUNDING SOURCE</b> – Operating budget	

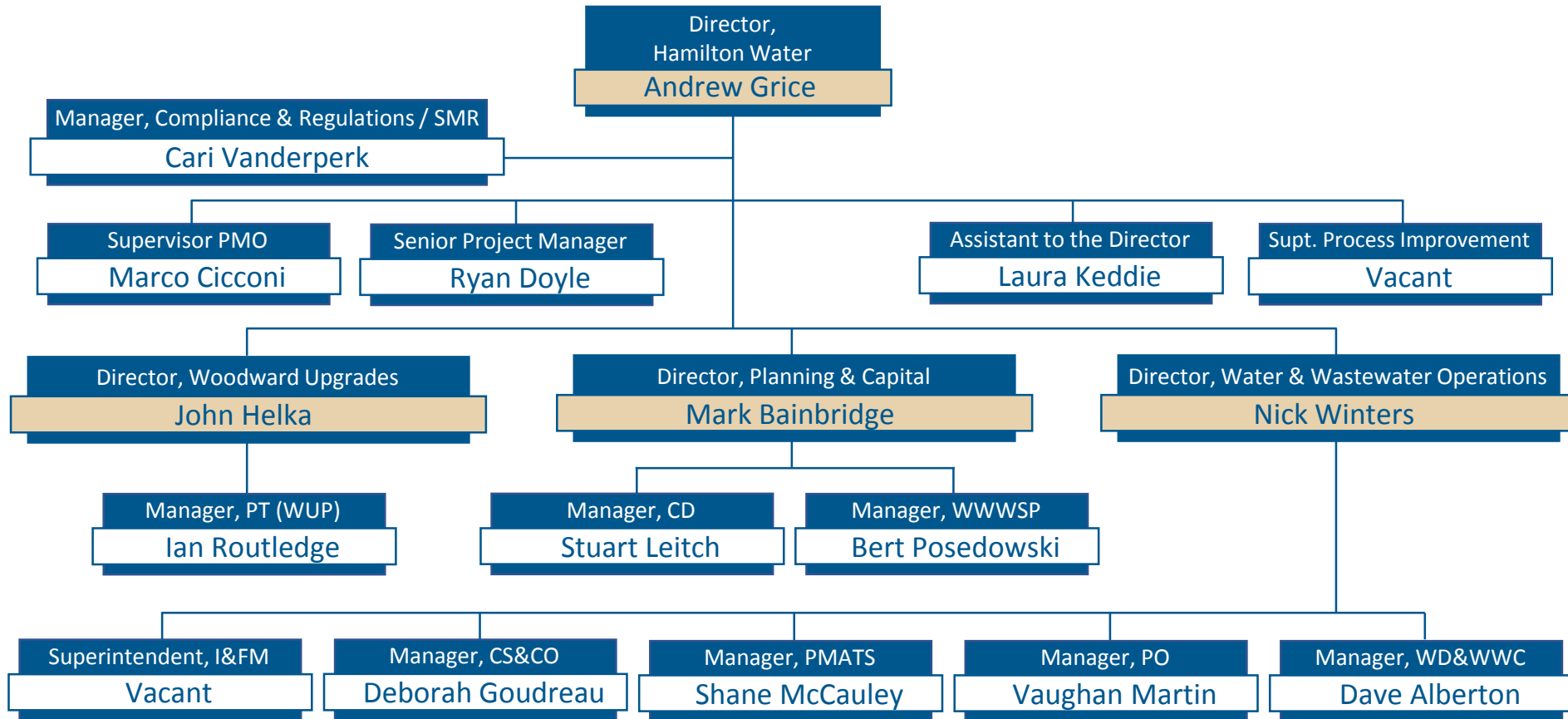


# 2021 OPERATING BUDGET

## HAMILTON WATER



# ORGANIZATIONAL CHART



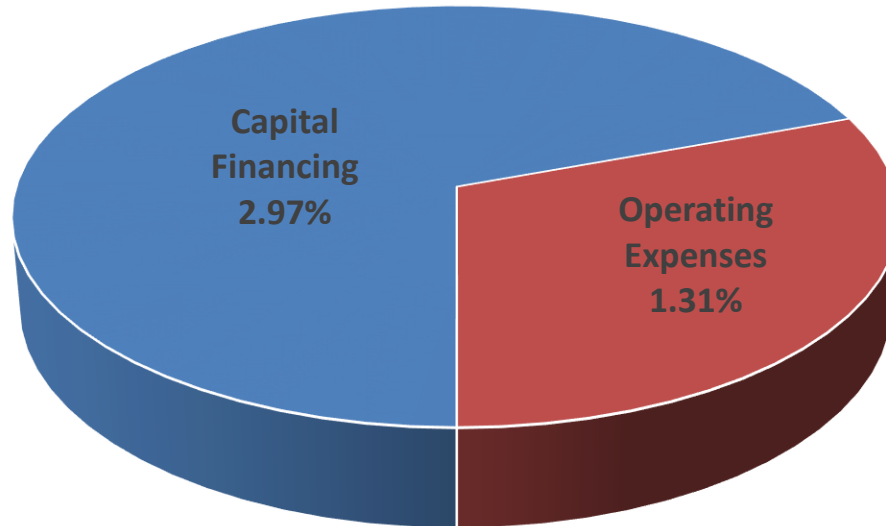
Complement (FTE)	Total
2020	324.65
2021 (Request)	338.65
Change: 2020 - 2021	+14



# 2021 PROPOSED RATE INCREASE

## Drivers of 4.28% Rate Increase

## Proposed rate increase - 4.28%



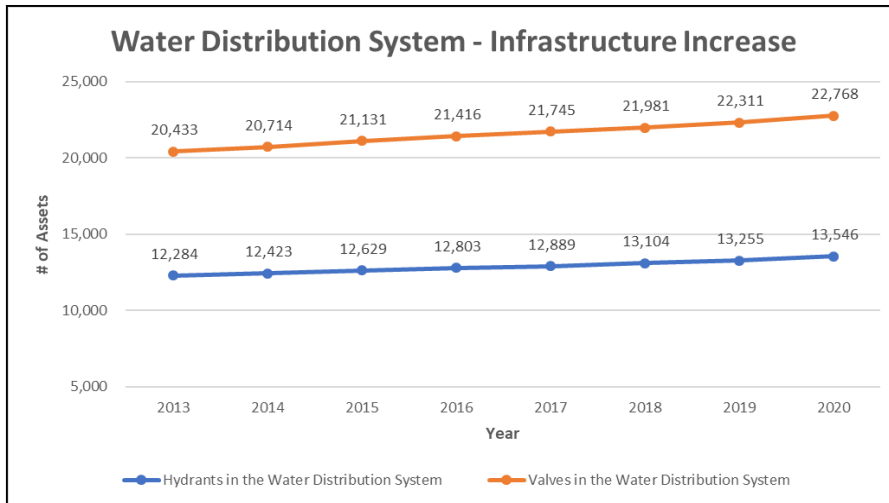
- ❖ Operating expenditures have been aligned with historical actuals
- ❖ Approximately 90% of operating expenditures are fixed in nature
- ❖ 2021 rate budget capital and operating expenses
  - Capital expenses - \$154M
  - Operating expenses - \$91M



# OPERATING IMPACTS FROM CAPITAL



- ❖ Woodward upgrades project – new facilities in operation (2021 & 2022)
- ❖ Lynden drinking water system – new facility
- ❖ Increased operational costs due to lagging capital rehabilitation program
- ❖ Stormwater ponds – newly assumed ponds from developments
- ❖ General system growth
  - Hydrants
  - Valves
  - Sewers
  - Watermains
  - Electricity Costs
  - Chemical Costs





# PRESSURES / RISKS NOT IN THE 2021 BUDGET



- ❖ Flooding and drainage master servicing study capital upgrades
- ❖ Stormwater management
  - Contaminated pond soils
  - Gaps in existing program
- ❖ Climate change
  - Flooding
  - Frozen water services
  - High lake water levels
- ❖ Unidentified projects
  - Development pressures
- ❖ Accelerated lead service removal



# 2021 RESOURCE REQUEST

SECTION		Previous 2021 Forecast	This Years 2021 Request
WUP Office		0	0
WUP Operations		3	3
DIR Office		0	0
C&R		4	1
PMO		0	1
P&C	CD	0	1
	WWWSP	0	0
Operations	PMATS	0	0
	PO	1	0
	CS&CO	2	2
	WDWWC	2	6
TOTALS		12	14

1 Millwright, 1 Instrument Tech,  
1 Electrician

1 Environmental  
Enforcement Officer  
1 Capital Budget Coordinator

(Temp. to Perm.)  
1 Technologist (Temp. to Perm.)

1 BFP Officer, 1 PM Outreach  
and Education (Temp. to Perm.)  
1 WDO, 1 Equipment Operator,  
2 Labourer/Truck Drivers  
2 Stormwater Technologists



# 2021 – FTE SAVINGS

FTE Request	Net Impact to Budget
<ul style="list-style-type: none"> <li>❖ Stormwater Program transferred to Hamilton Water in 2019 <ul style="list-style-type: none"> <li>• External consultants utilized for a variety of activities</li> <li>• Internal Hamilton Water staff can provide same service for reduced costs</li> <li>• Recommendation – 2 Stormwater Technologists</li> </ul> </li> </ul>	\$330,000/year Reduction
<ul style="list-style-type: none"> <li>❖ Water Distribution construction activities <ul style="list-style-type: none"> <li>• 2019 BMA report to Audit Finance and Administration Committee</li> <li>• Additional construction crew would reduce costs</li> <li>• Recommendation – 4 Water Distribution operations staff</li> </ul> </li> </ul>	\$620,000/year Reduction
<ul style="list-style-type: none"> <li>❖ Environmental monitoring and enforcement <ul style="list-style-type: none"> <li>• Program has been expanded to provide better control of ICI and construction sewer discharges</li> <li>• Additional revenue generated through sewer discharge permits to offset operational costs</li> <li>• Recommendation – 1 Environmental Enforcement Officer</li> </ul> </li> </ul>	Full annual cost recovery + environmental protection



# 2021 - 2025 RESOURCE REQUEST

SECTION		Previous 2021 Forecast	This Years 2021 Request	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast
WUP Office		0	0	0	0	0	0
WUP Operations		3	3	0	0	0	0
Director Office		0	0	0	0	0	0
C&R		4	1	1*/3	2*	1*	1
PMO		0	1	1	0	0	0
P&C	CD	0	1	0	0	0	0
	WWSP	0	0	1	2	1	0
Operations	PMATS	0	0	2	0	0	2
	PO	1	0	1	0	3	0
	CS&CO	2	2	0	0	0	0
	WDWWC	2	6	2	0	1	1
	IFM	0	0	0	1	0	0
TOTALS		12	14	10/1*	3/2*	5/1*	4



# 2021 - RESOURCE REQUEST

## **(3) 1 Millwright, 1 Electrician, 1 Instrumentation Technician – *Plant Maintenance & Technical Services***

- ❖ Maintenance of large, complex water/wastewater treatment infrastructure constructed as part of the Woodward Upgrades Project
- ❖ Staff required to support increase in facility maintenance demands

## **(4) 1 Water Distribution Operator, 1 Equipment Operator, 2 Labourer/Truck Drivers – *Water Distribution and Wastewater Collection***

- ❖ Crew for substandard water service replacement program (e.g. lead services)
- ❖ Shift from 100% contracted model to hybrid model of Contractor and City forces
- ❖ Estimated to complete 50% of lead service replacements per year

## **(2) Stormwater Technologists – *Water Distribution and Wastewater Collection***

- ❖ Administration of maintenance, capital repair and management of stormwater management facilities (SWMF), drainage easements, municipal drains, and select sections of shoreline and watercourses.
- ❖ Monitoring, inspection, and forecasting future clean outs of stormwater assets (e.g. 134 wet/dry ponds, 148km of watercourse, 630m of shoreline)
- ❖ Maintain regulatory compliance



# 2021 - RESOURCE REQUEST

## **(1) Capital Budget Coordinator – *Project Management Office***

- ❖ Maintain current levels of project controls
- ❖ Support expansion of project services to additional capital/operating teams
- ❖ Provides internal project support with legal, procurement, capital and operating teams

## **(1) Backflow Prevention Officer – *Customer Service and Community Outreach***

- ❖ Administer and enforce the backflow prevention bylaw
- ❖ Protects drinking water system by ensuring functional backflow devices are in place
- ❖ Program continues to expand in line with City growth

## **(1) Outreach and Education Project Manager – *Customer Service and Community Outreach***

- ❖ Responsible for various outreach initiatives including ongoing support – ex. corrosion control, lead water service awareness, flushables
- ❖ Future outreach initiatives including ongoing support – ex. flood mitigation, wastewater/combined sewage/stormwater infrastructure, spills/dumping to storm sewer catch basins
- ❖ Supports youth and adult education programs
- ❖ Liaison with Councillors and escalated resident/customer inquiries



# 2021 - RESOURCE REQUEST

## **(1) Technologist – *Capital Delivery***

- ❖ Supports Project Managers with design and construction activities such as regulatory approvals and construction inspections
- ❖ Supports water/wastewater capital works and future stormwater capital works
- ❖ Reduced engineering fees for site inspection

## **(1) Environmental Enforcement Officer – *Compliance & Regulations***

- ❖ Accommodate system growth to enforce construction dewatering and sewer use by-law programs
- ❖ Generates revenue through sewer discharge permits
- ❖ Supports emergency spills response program



# WOODWARD UPGRADES PROJECT PAST RESOURCE REQUESTS

## Original 2016 WUP Request

- 2 FTE in 2018
- 9 FTE in 2020



Total Request: 11 FTEs

1 SCADA Technologist  
1 Data Clerk  
5 Maintenance Operators  
2 Millwrights  
2 Instrumentation Technicians

---

## 2017/2019/2020 WUP Request

Advanced FTE requests as temporary positions to assist in the delivery of the project

- 3 FTE in 2017
- 1 FTE in 2019
- 4 FTE in 2020



Total Request: 8 FTEs

1 SCADA Technologist  
1 Process Supervisor  
1 Process Technologist  
5 Maintenance Operator's

*3 FTE approved during 2017 Budget, 1 FTE approved during 2019 budget & 4 FTE approved in 2020 budget*

## 2021 WUP Request

- Total requests: 3 FTE (Instrument Tech., Millwright, Electrician)

**Total Requests: 8 FTEs approved (2017/2019/2020) + 3 FTE (2021) = 11 FTEs**





THANK YOU





# 2021 Water, Wastewater and Stormwater Budget





Consumption

Legislative Framework

Growth and Development Charges

Canada / Ontario Government Programs

Rate Revenues – Fixed and variable Consumption Based

Reserves

Debt

# Rate Budget

Strategic Plan and Term of Council Priorities





# 2021 RATE BUDGET - What your dollars provide



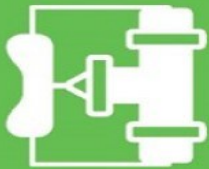
**120<sub>km</sub>**  
SEWERMAIN INSPECTION  
**12<sub>km</sub>**  
SEWERMAIN LINING



**7,900**  
WATER VALVE  
INSPECTIONS



**13,600**  
HYDRANT INSPECTIONS  
**3,500**  
HYDRANTS TO BE PAINTED



**130**  
ANTI-STAGNATION  
VALVE  
INSPECTIONS



**5,800**  
PREVENTATIVE  
MAINTENANCE  
WORK ORDERS  
WATER/WASTEWATER  
VERTICAL SYSTEMS



**8,150<sub>MWh</sub>**  
COGEN ELECTRICITY  
PRODUCTION



**2,300** SEWERLATERAL INSPECTIONS  
**60** SEWERLATERAL LININGS

**1,300,000<sub>m<sup>3</sup></sub>**



BIOGAS RESOURCE RECOVERY



**6<sub>km</sub>**  
WATERMAIN INSPECTION  
**6<sub>km</sub>**  
WATERMAIN LINING



**12** SUBSTANTIALLY  
COMPLETED  
WATER /  
WASTEWATER  
PROJECTS



**1,732**  
INLET/OUTFALL  
INSPECTIONS

**1,650**  
LEAK  
DETECTION/  
DISTRICT  
METERING





# 2021 RATE BUDGET

## Snap Shot

### Operating

- **\$245.6 M** Total Program Expenditures
- **\$242.7 M** Rate Revenue
- **\$2.9 M** Non-Rate Revenue

### Capital

- **\$299.9 M** Rate Capital Program
  - 56% Wastewater
  - 34% Water
  - 10% Storm
- **\$2.53 B** capital investment forecast (2021 to 2030)
- **\$0.04 B** increase from last year's 10-year forecast

Recommended Combined Rate  
Increase 4.28%  
Approved-in-Principle



# 2021 RATE BUDGET



# 2021 RATE OPERATING BUDGET

## By the Numbers

Summary of the 2021 Operating Budget				
(\$ millions)	2020 Restated Budget	2021 Requested Budget	2021 Requested / 2020 Restated Change	
			\$	%
<b><u>Expenditures</u></b>				
Program Expenditures	\$ 86.7	\$ 90.7	\$ 3.9	4.5%
Capital/Debt / Reserve Financing	\$ 146.3	\$ 154.9	\$ 8.6	5.9%
<b>Total Expenditures</b>	<b>\$ 233.0</b>	<b>\$ 245.6</b>	<b>\$ 12.5</b>	<b>5.4%</b>
<b><u>Revenues</u></b>				
Rate Revenue	\$ 230.0	\$ 242.7	\$ 12.7	5.5%
Non-Rate Revenue	\$ 3.0	\$ 2.9	(\$ 0.2)	( 0.1%)
<b>Total Revenue</b>	<b>\$ 233.0</b>	<b>\$ 245.6</b>	<b>\$ 12.5</b>	<b>5.4%</b>
<b>Average Residential Water / Wastewater / Storm Bill</b>	<b>\$ 752.60</b>	<b>\$ 784.80</b>	<b>\$ 32.20</b>	<b>4.28%</b>

*Note: Anomalies due to rounding.*



# 2021 RATE CAPITAL BUDGET

## Sources of Funding

\$ 24.2 M Grants, Subsidies & Other Revenues +  
\$ 77.0 M Development Charges +  
\$125.4 M from Operating +  
\$ 14.6 M Reserves +  
\$ 10.7 M Work-in-progress (WIP) +  
\$ 48.0 M Debt

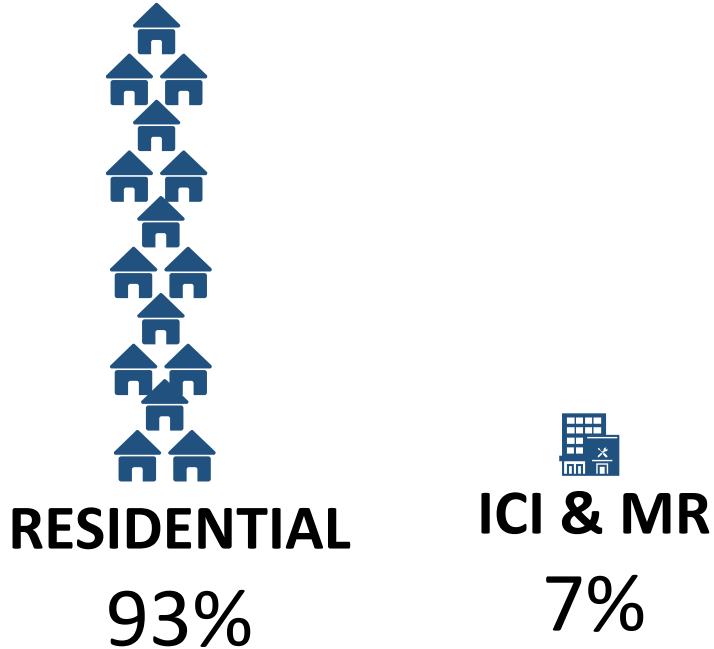
= \$299.9 M Gross Capital Funding



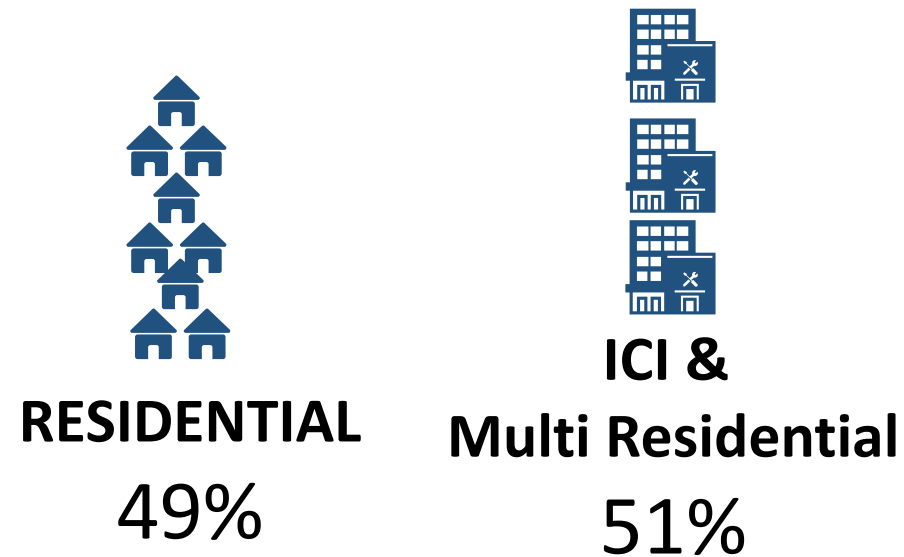
# 2021 METERED ACCOUNTS & REVENUE BY SECTOR

Where the \$ come from

## Metered Accounts by Sector



## Revenue by Sector



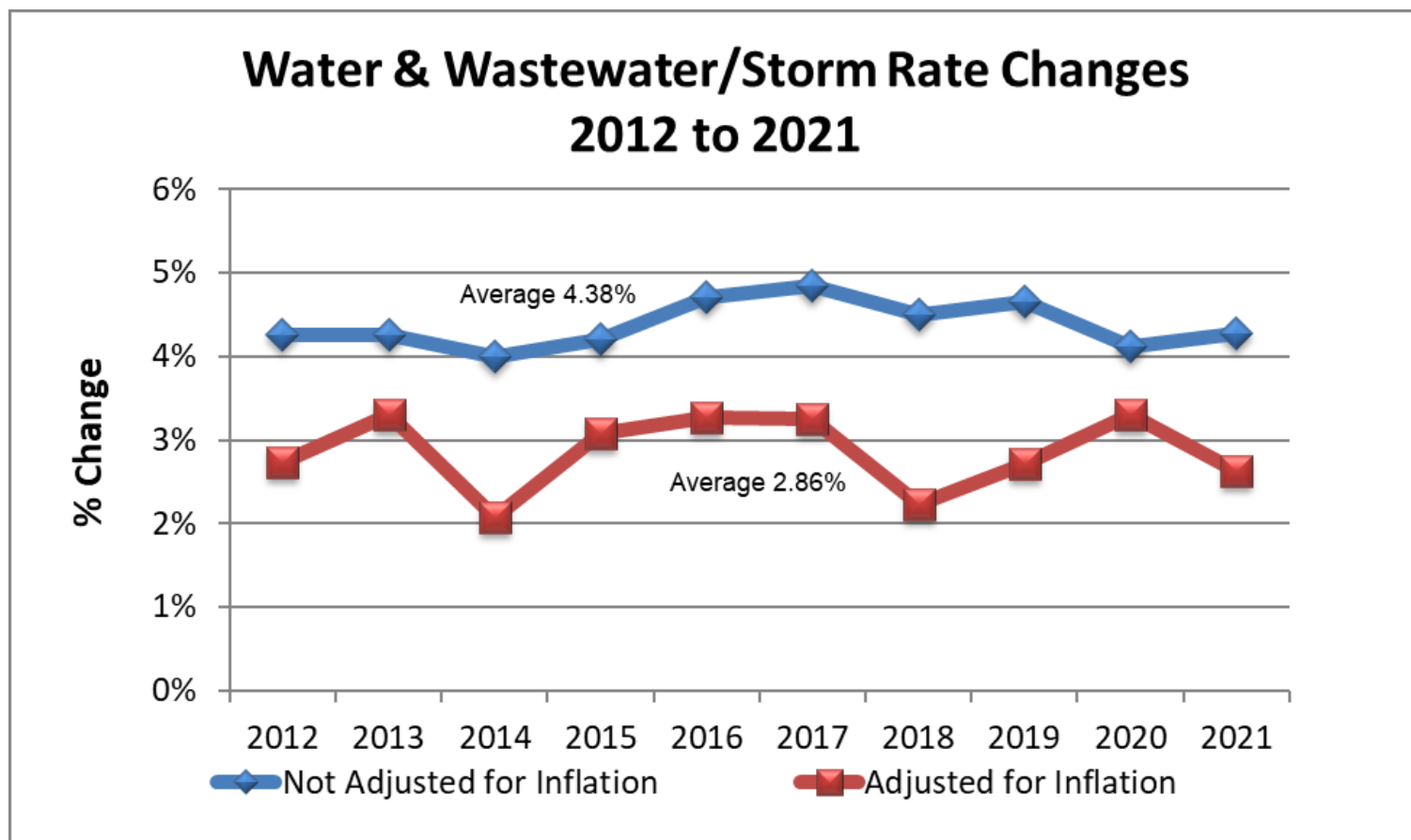


# RATE INFORMATION AT A GLANCE



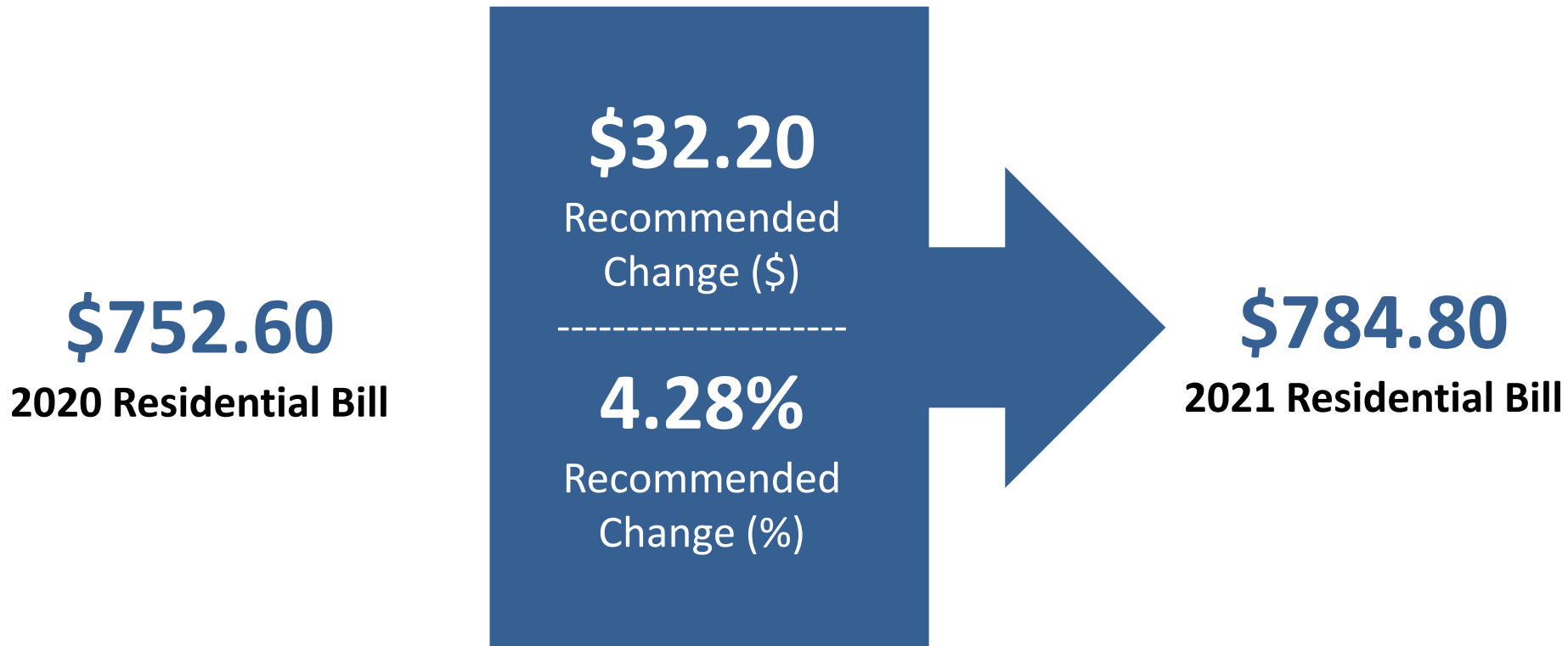
# 10 YEAR RATE INCREASE TREND

By the numbers





# 2021 RESIDENTIAL AVERAGE BILL



**Impact of Recommended 2021 Water and Wastewater/Storm Rate Increases on a Typical Residential Bill: 4.28%**

*Based on annual water consumption of 200m<sup>3</sup>*



# CONSUMPTION TRENDS AT A GLANCE



# RESIDENTIAL WATER CONSUMPTION



**2012**

**2020**

+ 12,800 accounts  
10% increase



**2012**

**2020**

1% decrease  
in consumption



# 4 YEAR WATER CONSUMPTION FORECAST (M<sup>3</sup>)



2021 → 2024  
**SLIGHT GROWTH**  
Residential



2021 → 2024  
**CONSISTENT**  
ICI/ Multi Res



(Aldershot  
Water Only)

2021 → 2024  
**CONSISTENT**

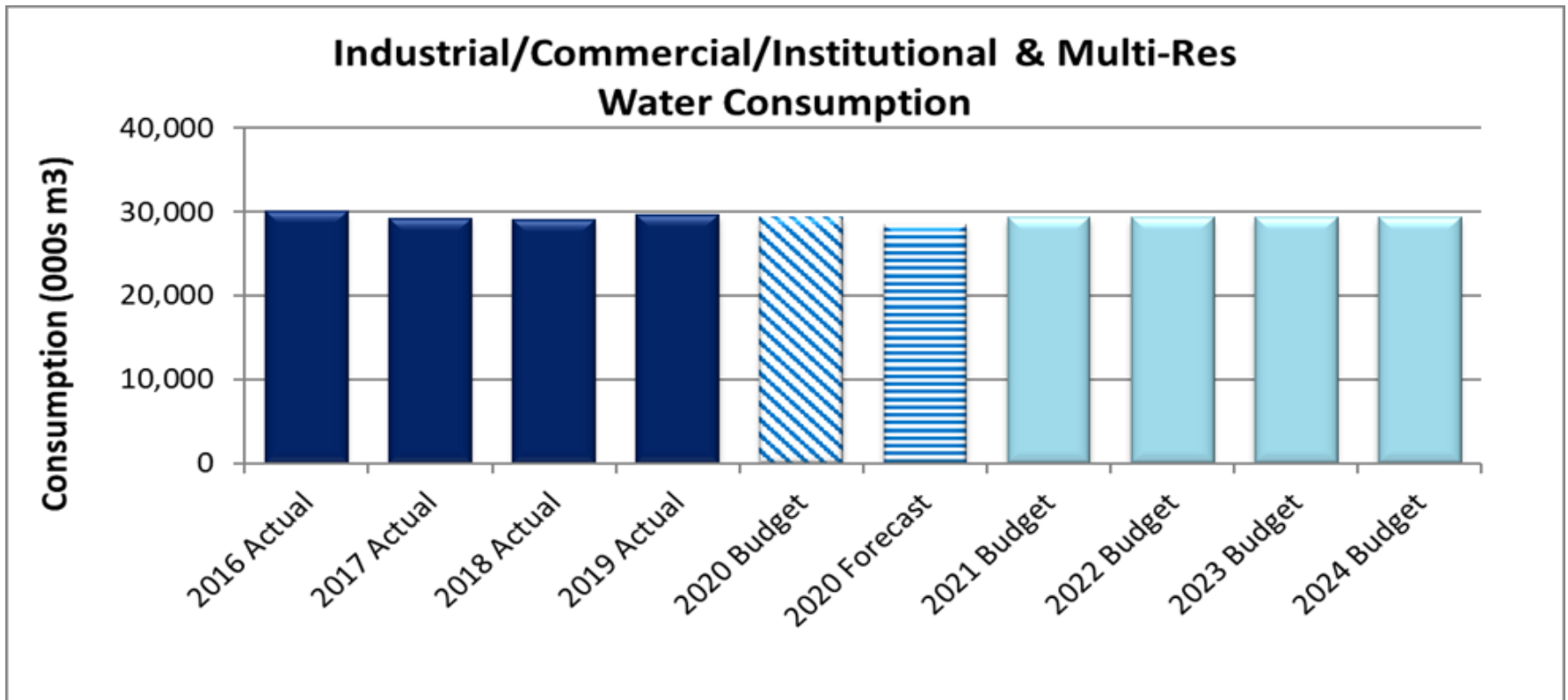


(Caledonia & Cayuga  
Water Only)

2021 → 2024  
**CONSISTENT**



# ICI & MR CONSUMPTION FORECAST



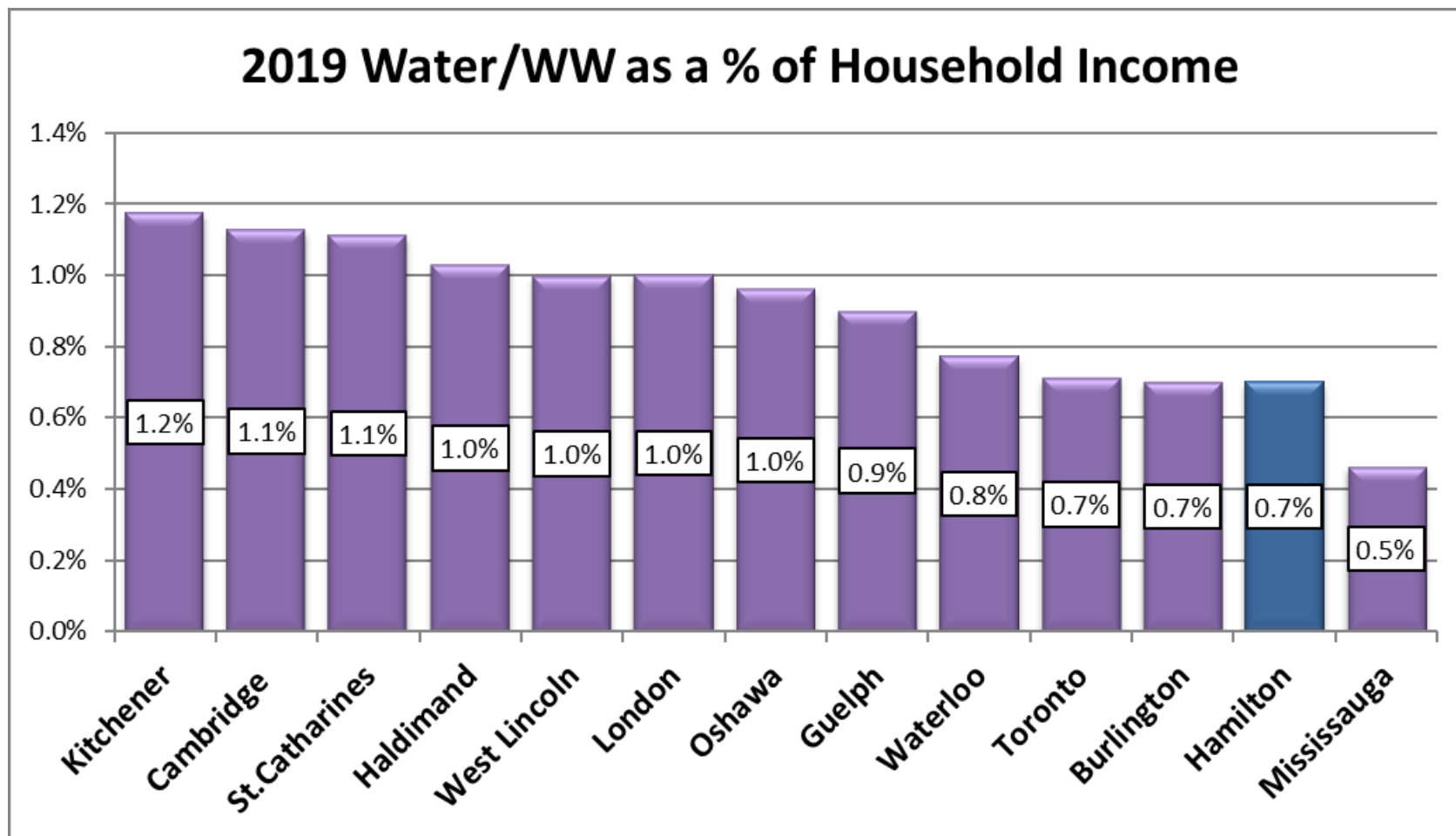
**Consumption remains very consistent at just under 30M m<sup>3</sup>**



# MUNICIPAL COMPARATORS



# HOW DOES HAMILTON COMPARE?



Source: BMA Management Consulting Inc. – Municipal Study 2019



# HOW DOES HAMILTON COMPARE?

## 2020 Water Bill Residential

200m<sup>3</sup>/ (year)

Survey Average  
\$1,022

Kitchener: \$1,503

⚡ Norfolk: \$1,366

⚡ Cambridge: \$1,171

⚡ West-Lincoln: \$1,168

London: \$1,113

Waterloo: \$1,040

⚡ Haldimand: \$1,038

Guelph: \$998

⚡ St. Catharines: \$974

⚡ Brantford: \$943

⚡ Durham: \$913

⚡ Halton: \$902

Toronto: \$815

**Hamilton: \$753**

Peel: \$632

Stormwater  
included

Stormwater  
not  
Included ⚡

Hamilton provides **three**  
services for less than some  
municipalities which offer  
**two**

⚡ Comparators where Stormwater  
funded by property tax

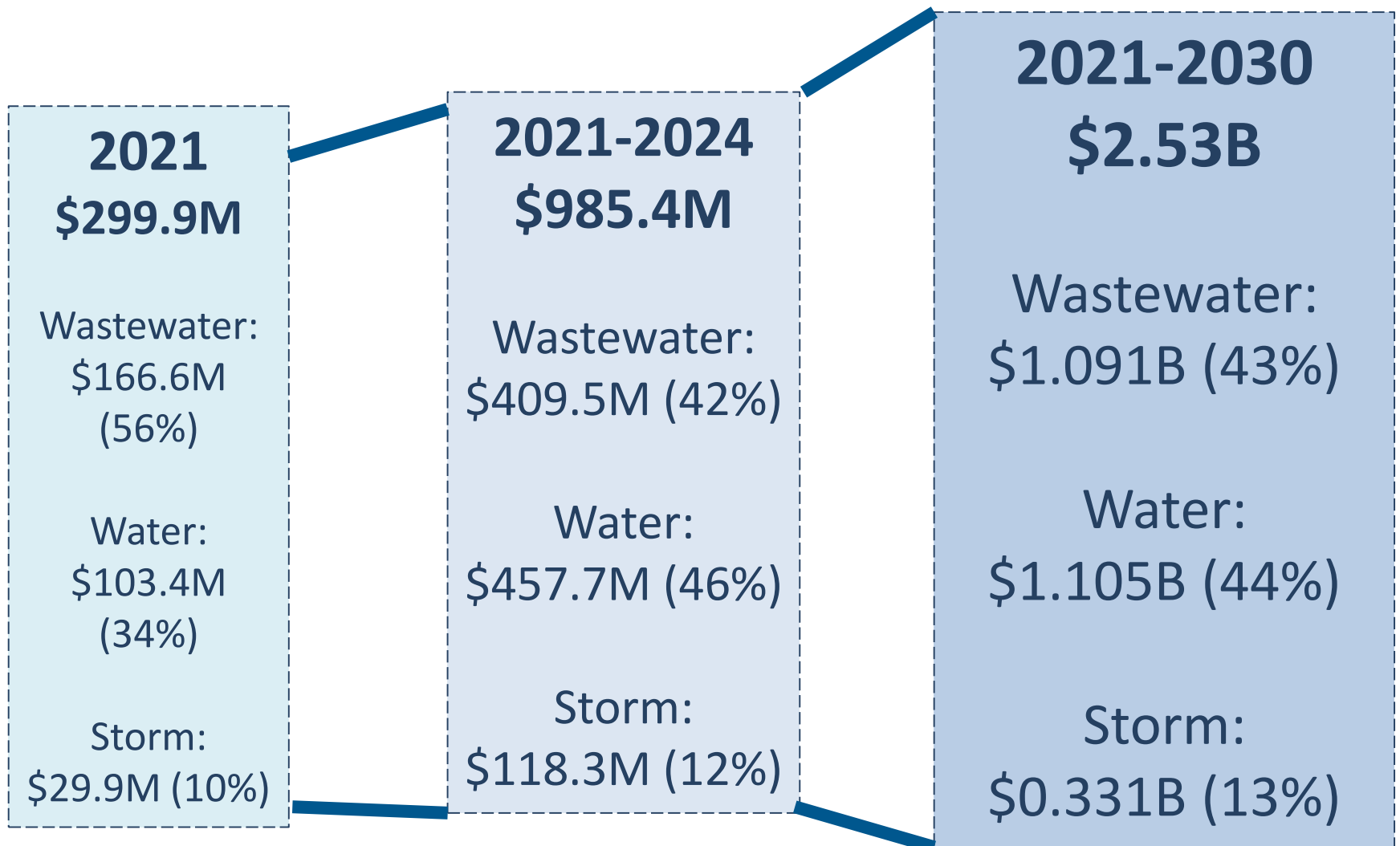


# CAPITAL INVESTMENT AT A GLANCE



# LONG TERM CAPITAL PROGRAM

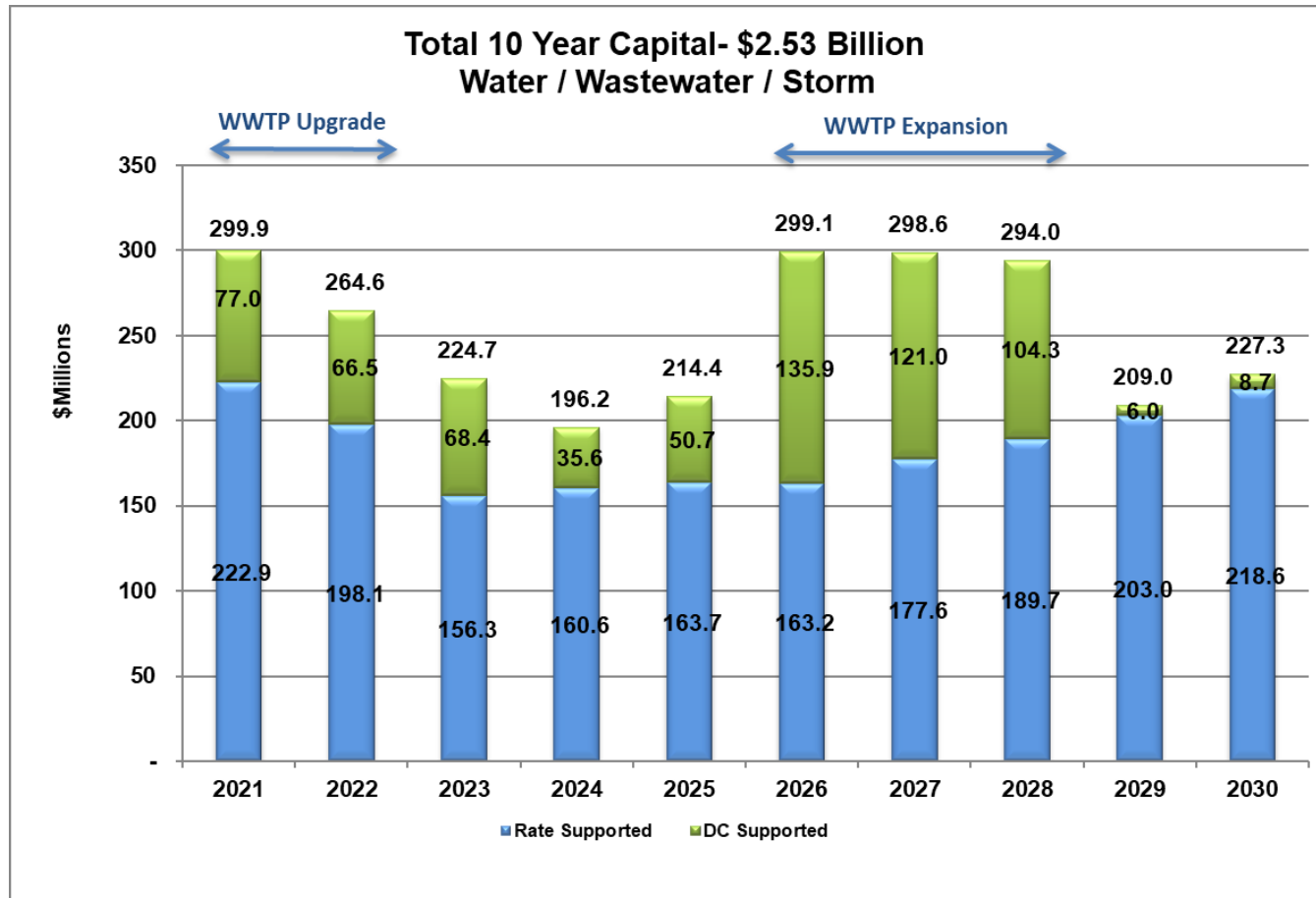
At a Glance





# 10 YEAR CAPITAL PROGRAM

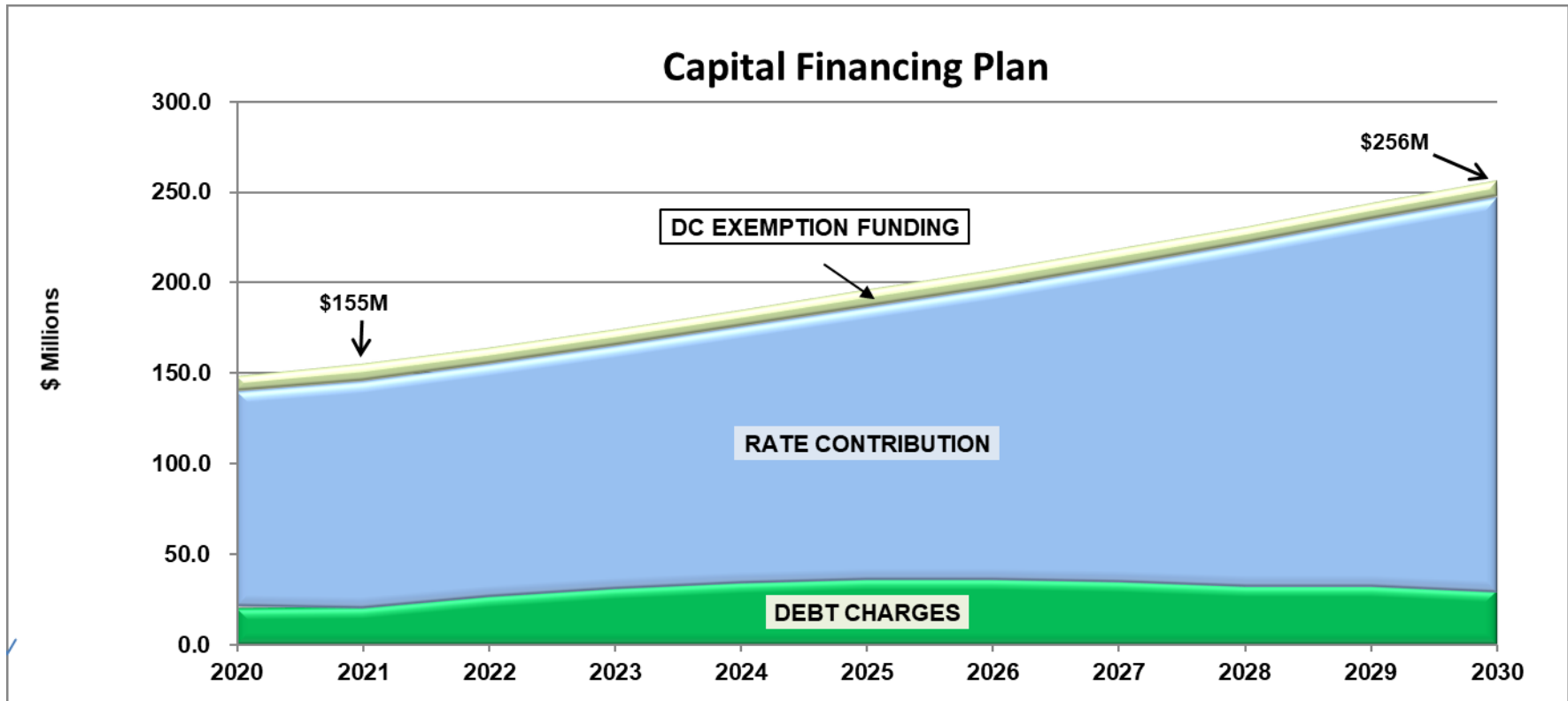
How much we plan to spend





# 10 YEAR CAPITAL STRATEGY

How will we pay for it



**Contribution to capital increasing from \$155M in 2021 to \$256M in 2030**

*Largely due to increase in capital construction*

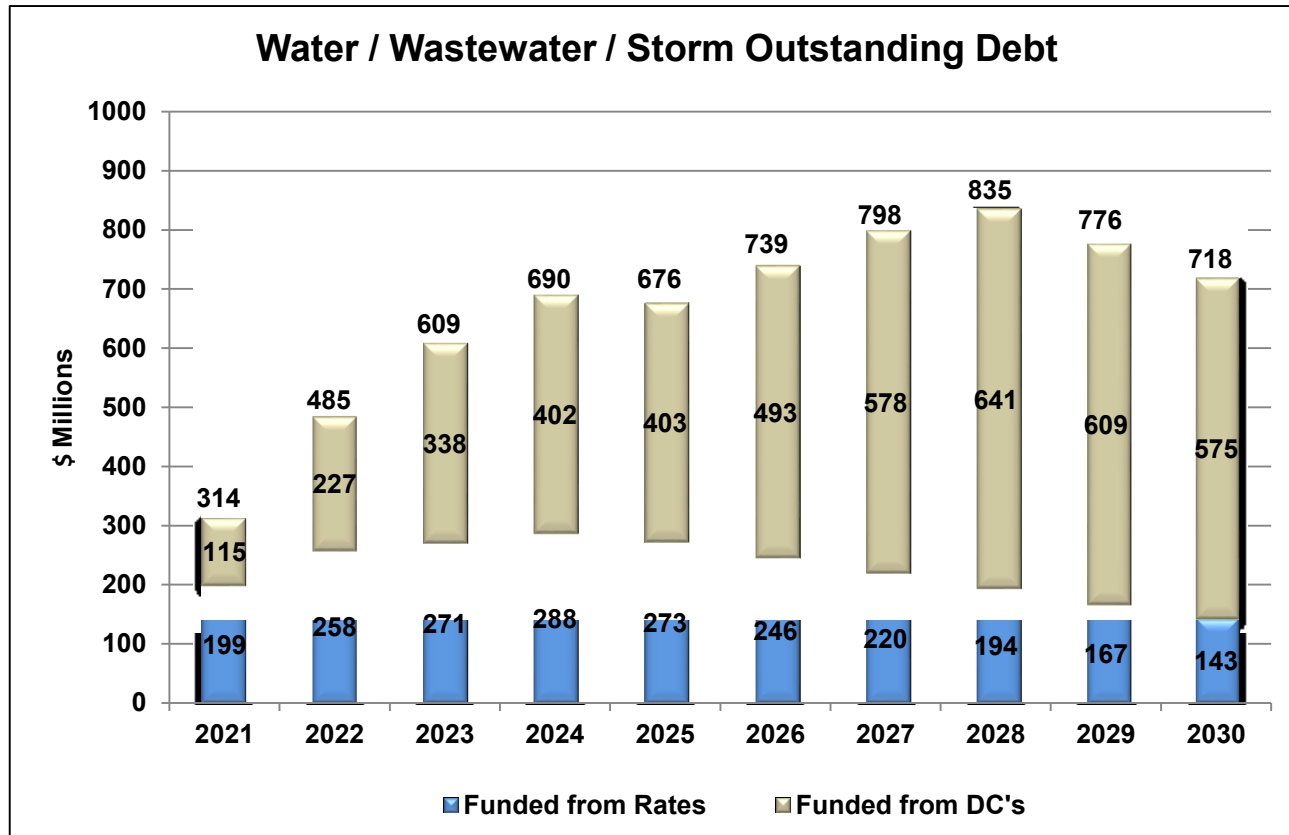


# DEBT FUNDING AT A GLANCE



# 10 YEAR CAPITAL STRATEGY

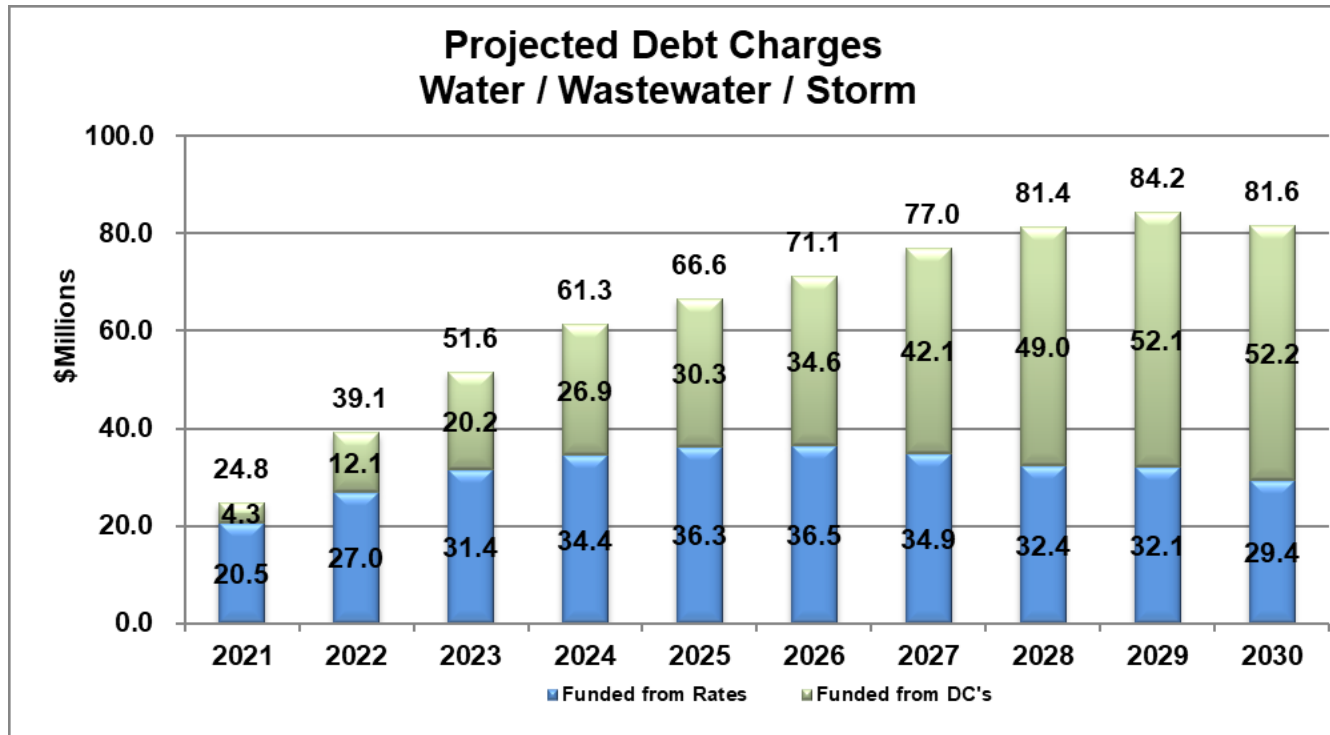
What does our debt look like?





# 10 YEAR CAPITAL STRATEGY

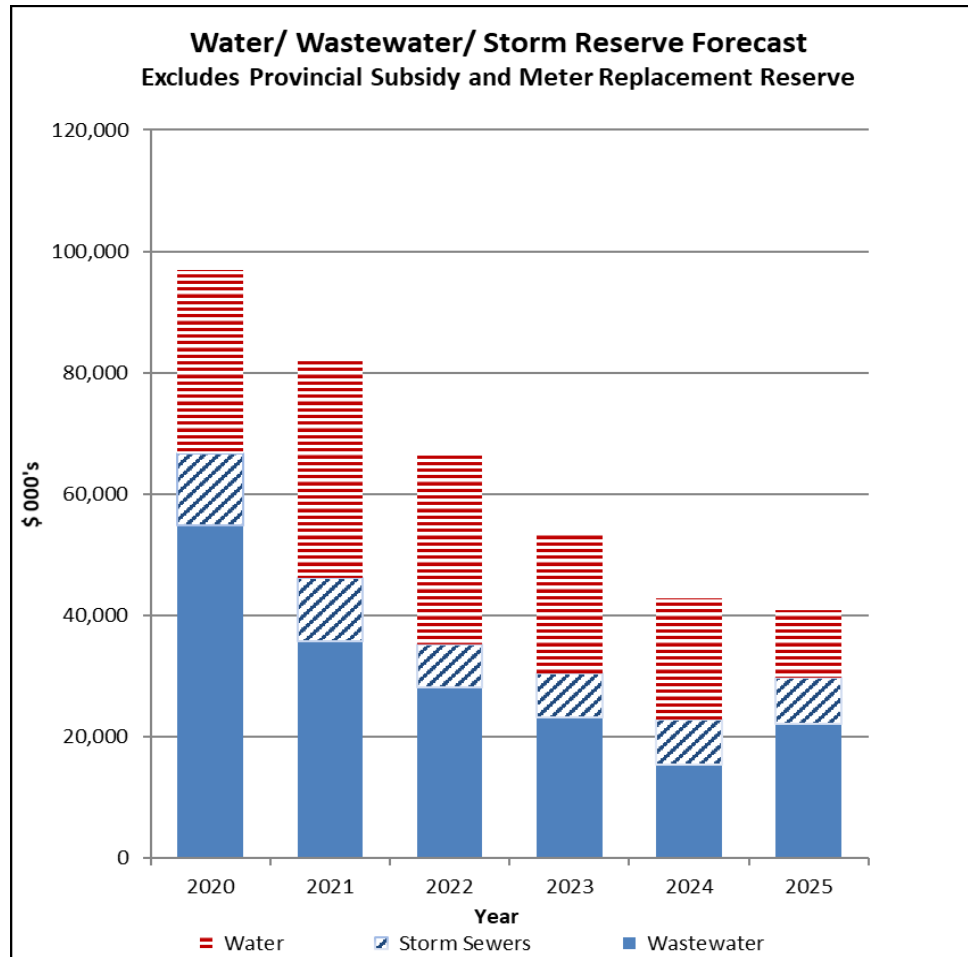
How much does our debt cost?





# 10 YEAR CAPITAL STRATEGY

How much reserves will we use?





**Suggested amendments to the Rate Budget include:**  
Kenilworth Reservoir Soil Contamination

**Recommendations:**

Gross project cost for Kenilworth Reservoir Soil Contamination of up to \$6.5M with funding from Waterworks Reserve 108015 be approved in the 2021 Budget



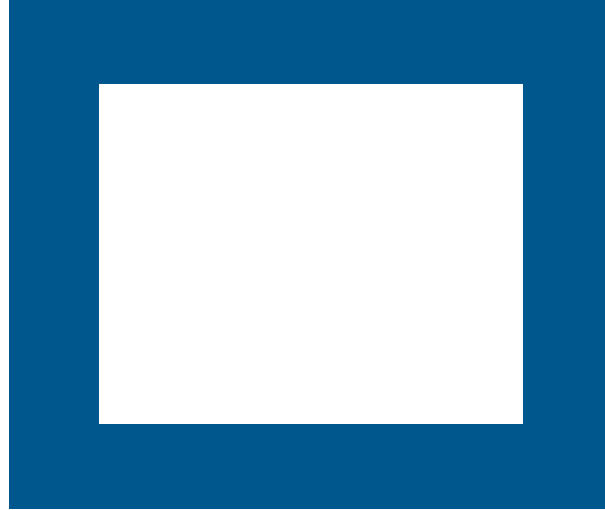
# NEXT STEPS

Nov 25, 2020	Council Approval of 2021 Rate Budget
Dec 1, 2020	GIC Rate Budget Meeting (note 1)
Dec 16, 2020	Council Approval of 2021 Rate Budget (note 2)

Note:

1. If needed
2. Council approval of the 2021 Rate Budget on Dec 16, 2020, if it is not approved at GIC on Nov 23, 2020





# THANK YOU