

City of Hamilton GENERAL ISSUES COMMITTEE AGENDA

Meeting #: 22-002(e) Date: January 26, 2022 Time: 9:30 a.m. Location: Due to the COVID-19 and the Closure of City Hall (CC) All electronic meetings can be viewed at: City's Website: https://www.hamilton.ca/councilcommittee/council-committeemeetings/meetings-and-agendas City's YouTube Channel: https://www.youtube.com/user/InsideCityofHa milton or Cable 14

Stephanie Paparella, Legislative Coordinator (905) 546-2424 ext. 3993

Pages

- 1. APPROVAL OF AGENDA
- 2. DECLARATIONS OF INTEREST
- 3. APPROVAL OF MINUTES OF PREVIOUS MEETING
- 4. COMMUNICATIONS
- 5. CONSENT ITEMS
- 6. STAFF PRESENTATIONS
 - 6.1. Public Works Department 2022 Tax Operating Budget Presentation
- 7. DISCUSSION ITEMS
- 8. MOTIONS
- 9. NOTICES OF MOTION

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- 10. GENERAL INFORMATION / OTHER BUSINESS
- 11. PRIVATE & CONFIDENTIAL
- 12. ADJOURNMENT





PUBLIC WORKS 2022 OPERATING BUDGET

General Issues Committee January 26, 2022

Public Works contributes towards the City of Hamilton's vision to be the best place to raise a child and age successfully.

The Public Works Department supports the City's vision by providing high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner. The department brings the City's vision and mission to life through its core services including corporate facility management, infrastructure rehabilitation, roads operations, parks and green space maintenance, transit, and waste management which are essential to the lives of residents and visitors to the City.

Public Works provides services that are central to the lives of Hamiltonians.



PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

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SERVICES AND SUB-SERVICES

Cemeteries

- Active Cemetery Management
- Dormant Cemetery Management
- Active Cemeteries Support Services

Corporate Asset Management

Corporate Security

Energy Initiatives

- Energy Engineering Services
- Utilities

Engineering Services

- Construction Services
- Corridor Services
- Design Services
- Survey and Technical Services
- Waterfront Development Initiative

Facilities Management

- Capital Planning and Project Management
- Facilities Operations and Maintenance
- Facilities Planning and Business Solutions
- Space Management/Accommodations
- Stadium Operations
- Compliance

Fleet Services Management

- Capital Planning and Contract Management
- Fleet Maintenance
- Materials, Fuel and Systems Management
- Regulatory Compliance and Driver Training

Forestry

- Tree Maintenance
- Tree Planting
- Tree Maintenance and Planting Support Services

Horticultural Programs

- Beautification
- Beautification Support Services

Parks and Open Space Access

- Parks Maintenance
- Planning, Design, Development and Acquisition
- Natural Open Spaces
- Parks and Natural Open Space Support Services

Public Transportation

- Conventional Public Transit
- Rapid Transit
- Specialized Public Transit
- On Demand Transit

Roadway Maintenance

- Right of Way Infrastructure Maintenance Support Services
- Right of Way Infrastructure Repairs and Maintenance

Transportation Operations

- Transportation Systems
- Traffic Engineering and Road Safety
- Signs and Pavement Markings Operations
- Signal, Systems & Street Lighting Operations

Solid Waste Management

- Bulk Waste Collection Services
- Cleanliness Services
- Drop Off and Transfer Facilities
- Garbage and Organic Waste Collection
- Leaf and Yard Waste Collection Services
- Organics Processing
- Recycling Processing
- Recycling Collection
- Solid Waste Support Services
- Waste Disposal and Closed Landfills

Storm Water Management

- Storm Water Collection
- Storm Water Support Services
- Storm Water Treatment

Water Supply and Distribution

- Water Distribution
- Water Supply
- Water Support Services

Wastewater Collection and Treatment

- Wastewater Collection
- Wastewater Support Services
- Wastewater Treatment

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	Presentation Date	Approval Date
Water – Rate Budget	November 22, 2021	November 24, 2021
Capital Budget	November 26, 2021	December 15, 2021
Transit Day	January 21, 2022	TBD
Public Works	January 26, 2022	TBD









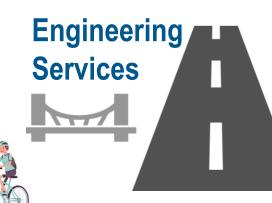


PUBLIC WORKS





Operations & Maintenance







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TERM OF COUNCIL PRIORITIES (2018 – 2022)

- Climate Change
- Multi-Modal Transportation
- Homelessness & Affordable Housing
- Integrated Growth & Development
- Fiscal Health & Financial Management
- Equity, Diversity & Inclusion
- Trust & Confidence in City Government
- A Healthy, Respectful & Supportive Workplace





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CAPITAL INFRASTRUCTURE



2021 KEY METRICS

- 48 projects tendered worth \$111M
- Added 10.24 new lane kms roads
- Added 5.03 new lane kms of sidewalks



PROJECT HIGHLIGHTS

- Pier 8 Promenade Park Copps Pier
- Pier 5-7 shore wall and boardwalk
- West Harbour gas dock
- Pier 8 Wastewater Pumping Station
- Rymal Road Fletcher to Upper Centennial
- Sherman Access rockfall protection
- Highway 8 (Phase 2)



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Pier 8 Promenade Park – Copps Pier



CURRENT TRENDS & ISSUES

- Roads value for money asphalt audit
- Design guideline changes
- Managing more complex projects
 - Tunneling projects
 - Escarpment management
 - Airport Employment Growth District
 - North Waterdown corridor



Upper James Force Main



Rymal Road

PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

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LOOKING AHEAD 2022

- \$30M Canada Community Building Fund
- Development of Transportation
 Operational Plan (design and construction processes)
- Southcote Road reconstruction
- Claremont Access bin wall removal
- Govenors Road bridge
- Valley Inn bridge
- Concession St/Mountain Brow Blvd.
- Dickenson Road Trunk Sewer Project



Valley Inn Bridge



Claremont Access



2023 - 2025

- Birch Avenue two way conversion and railway bridge replacement
- Lower Centennial trunk sewer twinning
- Upper Wentworth pedestrian bridge across Linc
- North Waterdown corridor
- Garner Road watermain
- 403 sewer twinning
- Stonechurch Road feeder main
- Dundas Street bridge reconstruction
- Pier 8 Gateway Park
- Macassa Bay boardwalk and trail



Birch Avenue



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CAPITAL FACILITIES

PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

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2021 KEY METRICS

- Downtown Office Space Accommodation Project
 - Target **200** rentable sq. ft. per employee
 - Reached **186** rentable sq. ft. per employee
 - Reduced gross square feet by 13.8%



Valley Park Community Centre

CAPITAL FACILITIËS

PROJECT HIGHLIGHTS

- Greensville School/Community Centre
- Beverly School/Community Centre
- Valley Park Community Centre
- Parkdale Outdoor Pool
- Ancaster Memorial Arts and Culture Centre
- 500 McNab (Ken Soble Tower)



PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

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CAPITAL FACTLITIËS

CURRENT TRENDS & ISSUES

- Capital funding shortfalls
- Accessibility for Ontarians with Disabilities Act
- Increased facility inventory
 - Acquiring aging schools
 - Civic property
 - Lodges
 - Hamilton Police Investigative Services Division



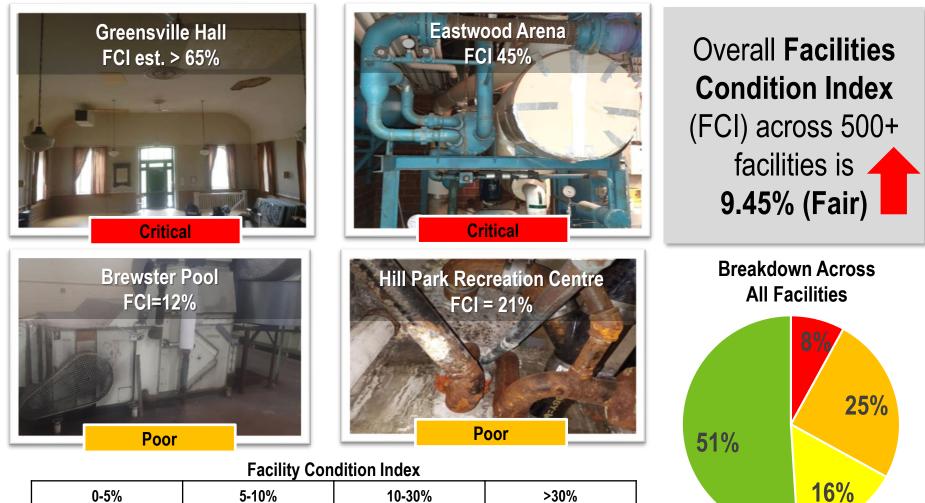
Greensville Library and Community Centre



Beverley Community Centre



CAPITAL FACTLITTIES



0-5%	5-10%	10-30%	>30%
Good	Fair	Poor	Critical



Hamilton

CAPITAL FACILITIËS

LOOKING AHEAD 2022

- Divesture of Downtown Entertainment Facilities
- ICIP Funding:
 - Community, Culture and Recreation (CCR) Projects
 - COVID-19 Resilience Funding
- New salt facility at 350 Wentworth St. N
- Continue improving indoor air quality initiatives with air purification systems

2023 - 2025

- ICIP Funding:
 - New Transit Maintenance & Storage Facility
- Hamilton City Housing projects:
- 55 Queenston Rd
- Bay/Cannon
- Macassa Lodge expansion
- Carlisle Library
- Confederation Park Phases II and III
- Waterdown Fire and Police Station



PARKS & OPEN SPACES

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2021 KEY METRICS

- 24,782 acres of grass mowed
- 12 play structures installed
- 258 encampment cleanups
- 2,495 metres of trail constructed
- 1,467 meters of trail replaced
- 14.67 Ha parkland built or redeveloped
- 25 park and trail construction projects
- 1,168 trees planted
- 3,301 play structure inspections
- 133 Team Up to Clean Up events



PARKS & OPEN SPACES PROJECT HIGHLIGHTS

- Spray pads (2 new; 1 upgrade)
- Multi-use courts (1 new; 4 upgrades)
- Tennis courts (2 upgrades)
- Fitness parks (1 new)
- Lighting upgrades/additions (5 sites)
- Condition assessments (fields, walkways)
- Albion Falls viewing platform (design)
- Shoreline protection (DMAF)



Albion Falls Viewing Platform (design)



PARKS & OPEN SPACES

PROJECT HIGHLIGHTS



Waterford Park



Eastwood playground



Joe Sam's leisure park walkway



Veevers playground



Mount Hope Boardwalk



Winona playground

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PARKS & OPEN SPACES

CURRENT TRENDS & ISSUES

- Encampment cleanups
- Climate change
- Enforcement of encroachments
- Backlog of capital investment
- Waste/cleaning increases due to COVID-19
- Legislative changes
- Operating cost increases and impact on capital



Churchill Park rain gardens



Encroachment on City property



LOOKING AHEAD 2022

- Completion of backflow compliance
- Enhanced accessibility in parks
- Shoreline protection (DMAF)
- Sam Lawrence Park (Phase 1 construction)
- HAAA construction
- Wm Connell Winter Wonderland Phase 1
- Mountain Bike Study
- Albion Falls viewing platform (design)
- 12-15 new playground replacements
- Valley Park skateboard park

PARKS & OPEN SPACES 2023 - 2025

- Alexander Park skateboard park
- Brightside Park construction
- Mountain Brow Trail implementation
- Trails Master plan update



Community cleanup trailer

Mobi-mat



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FORESTRY



2021 KEY METRICS

- 17,908 trees planted
- 1,316 calls for storm damage relating to trees
- 23,020 requests for service
- 1,948 development applications reviewed
- 2,162 Emerald Ash Borer planned tree removals (Year 9 of 10)
- **1,762** trees given through the Free Tree Giveaways



PROJECT HIGHLIGHTS

FORESTRY

- COVID-19 staff redeployments
- GIS Tree Inventory project
- Online forestry education program for grade 3 students



Forestry truck with new wrap



FORESTRY

CURRENT TRENDS & ISSUES

- Focus on tree maintenance program
- Lymantria dispar dispar (LDD Moth) aerial control program
- Increased tree planting, final year of Emerald Ash Borer program funding
- Tree canopy equity strategy
- Storm damage response and costs
 - Climate emergency
 - Increase intensity / frequency
- Increased development / intensification
 - Impacts to tree canopy



LDD moth aerial control program 2018/2019





Ice storm clean up





FORESTRY

LOOKING AHEAD 2022-2025

- Improve GIS & spatial tree inventory
- Urban Forest Strategy
- Urban forest health monitoring for new, existing, and forecasted pests and diseases
- Complete Emerald Ash Borer management by 2023
 - Tree removals
 - Tree replacements
- Strengthen relationships with Conservation Authorities and local/ provincial NGO's for tree planting initiatives



Grid trimming



Forestry winter operations



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HORTICULT Of 182

2021 KEY METRICS & HIGHLIGHTS

- Grew 273,208 plants
- Planted and maintained:
 - 72 roundabouts
 - 9 business improvement areas (BIAs)
 - 571 floral planters
 - 348 floral traffic islands
 - 669 hanging baskets
 - 131 perennial gardens
 - 68 civic buildings
- 27,978 visitors to the Gage Park Tropical

Greenhouse



- 12,123 visitors to the 2021 Mum Show
- 27 Hamilton in Bloom Traffic island sponsors
- 266 White Trillium Awards
- 14 Pink Trillium Awards



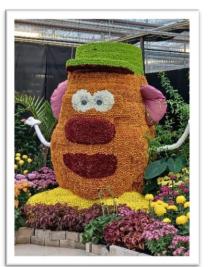
Horticulture staff

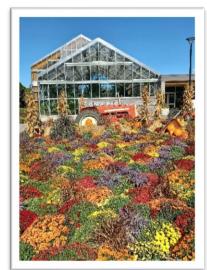


HORTICULTURE

2021 SPECIAL HIGHLIGHTS

- Topiary at City Hall (Mickey Mantis)
- Modified Mum Show due to pandemic
- Public feedback about annual beautification
- Revamped digital Trillium Awards program





2021 Mum Show

2021 Mum Show



Sam Lawrence Park rock bed



Hayward Park naturalized bed



York Boulevard



HORTICUL TURE

CURRENT TRENDS & ISSUES

- Requests for planters to support pedestrian, bicycle and traffic calming
- Aging irrigation systems in older traffic island beds
- Compliance with backflow prevention by-law in traffic islands



Traffic island beautification



Sherman and Crockett island



Traffic median floral display



Kimberly Drive

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HORTICULTURE

LOOKING AHEAD 2022-2025

- Continue lifecycle replacements of horticultural related infrastructure such as irrigation systems
- Enhanced programming for the Tropical Greenhouse
- Ward funded traffic island conversions



Sam Lawrence Park horticulture display



Tropical Greenhouse



Upper James and Mohawk 30



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CEMETERES



CEMETERIES

2021 KEY METRICS

- 1,244 internments
- 124 columbarium niche sales
- \$1,360,673 pre-need sales





Parkside Cemetery path

PROJECT HIGHLIGHTS

- Parkside Cemetery
- Cholera bed redevelopment
- Digitization of cemetery documents
- GIS inventory and assessment of cemetery paving, drinking fountains and commemorative features



Cholera bed



CEMETERIES

CURRENT TRENDS & ISSUES

- Potential for private cemeteries to be assigned to the municipality to operate and maintain
- Cemeteries as parkland and increased visitors
- Aging infrastructure and lack of capital reinvestment



Woodland Cemetery pollinators



Columbarium



CEMETERIËS

LOOKING AHEAD 2022

- Continue to implement cemeteries branding and marketing plan developed in 2018/19
- Sales at Parkside Cemetery
- Design and construction for green burial at Mount Hamilton Cemetery
- Pet burial section at Mount Hamilton

2023 - 2025

• Improvements at Mountview Hamilton



Example of green burials wildflowers









2021 METRICS & HIGHLIGHTS

+27 million waste pickups per year 225,300 tonnes of residential waste







2021 HIGHLIGHTS

- New contracts for waste collection and composting facility
- Increase in blue box curbside tagging and audits
 - Lower overall recycling contamination
- Seasonal yard waste curbside collection
 - No yard waste collections between Dec Feb
- Project underway to increase the processing capacity at the CCF beyond current 20,000 MT cap
- Implementation of the new City of Hamilton Waste Requirements for Design of New Developments
- "Separate, Don't Contaminate" ad campaign



Waste packer truck



Waste collections vehicle







CURRENT TRENDS & ISSUES

- Waste Free Ontario Act
 - Working with industry associations to prepare for transition, communicate future program change
- Managing an aging workforce and a work environment prone to injuries and absenteeism
- Plateaued diversion rates continue to threaten the life expectancy of the Glanbrook Landfill
 - Current 2046
- Processing capacity at the CCF is capped at 20,000 MT/year



Collections truck



Curbside waste collection

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LOOKING AHEAD 2022

- Route optimization / balancing of collection routes
- Strategy to ensure reduced contamination at waste facilities
- Blue box transition planning
- Waste audits and education to support multi-residential waste diversion



Recycling facility

2023 - 2025

- Implementing "green fleet" program initiatives
- Investigating "administrative penalty system" for waste bylaw enforcement
- Looking at efficiencies at the transfer stations/CRCs with goal to expand



Collections staff



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WATER, WASTEWATER & STORMWATER



PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

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2021 METRICS

- **78.87** billion litres of water treated
- **884** substandard water service line replacements
- 61,512 water samples tested
- 11 confirmed AWQI's

PROJECT HIGHLIGHTS

- Water distribution system leak detection
- Drinking water advisory lifted in Lynden (Aug 5, 2021)
- City staff replacing public portion lead water service pipes



Substandard water line replacement



Lynden





CURRENT TRENDS & ISSUES

- Increase in low chlorine adverse water quality incidents
- Contaminated soil removal at Kenilworth reservoir
- Increasing costs for water treatment chemicals



Kenilworth Reservoir

LOOKING AHEAD 2022-2025

- Water Treatment Plant Upgrades -Contract #2
- Pressure District 7 (Elfrida) Water Tower
- SCADA Cyber Security Program
- Alectra Utilities discontinuation of water billing services



Electrical power centre – Woodward Upgrades



WASTEWATER

2021 METRICS

- 80.3% wastewater treatment capacity
- **40,802** tonnes of biosolids processed on site
- 8 substantially completed projects
- **23** wastewater treatment bypasses
- 15 odour complaints at the Woodward WWTP



Twenty Road Wastewater Pumping Station

PROJECT HIGHLIGHTS

- Partnerships and contributions to SARS-CoV-2 testing in wastewater -University of Ottawa
- Continuous wastewater treatment plant
 effluent compliance
- AEGD pumping station upgrades



Twenty Road Wastewater Pumping Station



WASTEWATER WASTEWATER

CURRENT TRENDS & ISSUES

- Dundas wastewater treatment plant upgrades funding
- Increased # of Woodward wastewater treatment plant bypasses in 2021
- Biosolids facility odour complaints



LOOKING AHEAD 2022-2025

- Woodward Upgrades program completion
- Real time control phase 2 construction
- CSO outfall monitoring enhancement
- Design and tendering phase for Woodward wastewater treatment plant capacity expansion

Wastewater pumping stations at the WWWTP

STORMWATER

2021 METRICS

- **512** emergency spill responses
- 2,249 rain barrels sold
- **80** downspout disconnections
- 440 back water valves installed
- 24,652 tests on environmental samples

PROJECT HIGHLIGHTS

- Chedoke Creek and Cootes Paradise short term direct measures
- Surface water quality program
- Protective Plumbing Program enhancements (downspout disconnection grant)



Stormwater outfall



STORM WATER

CURRENT TRENDS & ISSUES

- Stormwater source control enforcement
- Chedoke Creek dredge plan extension
- Invasive species in watercourses and storm water facilities
- Backlog of stormwater facility dredging
- MECP consolidated linear ECAs



Stormwater flooding

LOOKING AHEAD 2022-2025

- Flooding and drainage master servicing study workplan
- Chedoke Creek and Cootes Paradise workplans
- Development of comprehensive storm water system hydraulic model



Floating vegetation mats Chedoke Creek



REHABILITATION



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INFRASTRUCTURE REHABILITATION

2021 KEY METRICS

- 57 lane km roads rehabilitated
- 67 lane km rural roads rehabilitated
- 99 km mainline sewers inspected
- 14km sewers rehabilitated
- 6 km watermains inspected
- 5km watermains rehabilitated
- 226 bridges inspected
- 14 bridges rehabilitated
- 22,000 catch basins inspected and cleaned
- 3.2 kms sidewalk replaced
- 11.11 kms sidewalks repaired



PROJECT HIGHLIGHTS

- Bell Project
 - Total Homes Permitted: **43,000**
 - Total Metres Permitted: 298,000m
 - Total Approved Permits: **138**
- Road cut restorations
 - Total road cut locations: 2,800
 - Total road cut value: \$6.1M



Bell Project



INFRASTRUCTURE REHABILITATION CURRENT TRENDS & ISSUES

- Backlog of structural rehabilitations
- Lead service replacement
- Implementing complete, liveable, better streets



Mudd Street Bridge



Example: Complete, liveable, better streets



INFRASTRUCTURE REHABILITATION

LOOKING AHEAD 2022

Critical watermain lining

- Beach Road
- Kenilworth Tunnel
- Rosedale Park Red Hill Creek Crossing

Critical sewer main lining

- Satellite City
- Inverness Avenue East

Road rehab projects

- Barton Street
- Scenic Drive
- Nebo Road
- Kenilworth Avenue
- Wilson Street



Sewer lining process



PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

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TRANSPORTATION



2021 KEY METRICS

- 17,200 catch basins cleaned
- 55 cross road culverts replaced
- 68 lane km of rural road resurfaced
- 7,291 pothole sites repaired
- 49 guide rail locations repaired
- 6,825 km of protected bike lanes installed
- 4,357 traffic signs repaired/replaced
- 9,095 MMS sidewalk deficiencies reported
- 9,581 Non MMS sidewalk deficiencies reported
- 3,207 sidewalk deficiencies repaired
- 22 lane kms of sidewalks repaired

TRANSPORTATION PROJECT HIGHLIGHTS

- Inventory audits
- LINC Annual Spring Maintenance
- Red Hill Valley Parkway Operational Plan



Traffic Operations Centre garage





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Rural roads - maintenance



TRANSPOR TATION

CURRENT TRENDS & ISSUES

- Operational impacts from growth capital projects
- Increased roadway repair costs
- Improved inventory controls resulting from audits
- Expanding and enhancing cycling infrastructure



Hunter St. bike lanes





Operations staff



Traffic signal repairs



TRANSPOR TATION

Pavement markings

LOOKING AHEAD 2022

- Enhanced winter sidewalk snow clearing
- Crack sealing program

LOOKING AHEAD 2023 - 2025

- Pavement preservation strategy
- Transportation Operational Plan
- Optimization of maintenance and operations activities



Winter conditions – snow clearing



Roads vehicles







2021 KEY METRICS

- 159 new speed cushion locations
- 640 community safety zone locations reviewed
- **15** automated speed enforcement pilot locations
- 16 new pedestrian crossovers installed
- 12 traffic signals installed/rehabilitated
- 48 neighbourhoods added to Vision Zero speed reduction program
- 33% reduction in total collisions

ROADWAY SAFETY PROJECT HIGHLIGHTS

- Vision Zero Action Plan & Dashboard
- Intelligent Transportation System Strategy
- Cycling facility design and implementation
- Ward 8, 14 & 3 complete street studies



Millen @ Shoreview – New pedestrian crossover





ROADWAY SAFETY

CURRENT TRENDS & ISSUES

- 50% reduction in vehicular traffic volumes COVID-19 impact
- Collisions involving vulnerable road users regularly result in injury
 - Pedestrian injuries 90.7% of the time
 - Cyclist injuries 78.7% of the time



Wellington @ Hunter - intersection enhancements





ROADWAY SAFETY

LOOKING AHEAD 2022

- Automated speed enforcement program
- Neighbourhood speed reduction project
- Roadway safety program examination

LOOKING AHEAD 2023 - 2025

- Implementing complete, liveable, better streets
- Administrative Monetary Penalty System (AMPS) integration for Red Light Camera and Automated Speed Enforcement programs



Cycling lanes



King @ Green Forest – New pedestrian crossover 58







2021 KEY METRICS

- 885,146 service hours (90% of budgeted hours as of November 30)
- 88% on-time performance
- 80,571 kms between preventable collisions
- 6,837 kms between mechanical failures

PROJECT HIGHLIGHTS

TRANSIT

- Introduced the first RNG fueled bus
- HSR myRide expands the service coverage in Waterdown and increases the number of bus stops
- 36 shelters along Main/King/Queenston are now solar shelters









First carbon negative bus pilot

Hamilton



CURRENT TRENDS & ISSUES

- Continued need for investments and funding for both operating and capital
- COVID-19 impacts and continued importance of safety measures for staff and customers alike
- Post pandemic ridership strategy welcoming customers back to transit and encouraging new customers to try transit



Bus at City Hall



Bus Operator on Route 58

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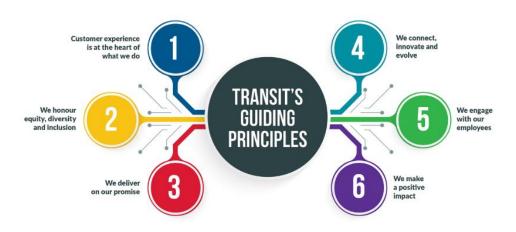






LOOKING AHEAD 2022

- Ridership recovery through service
 excellence
- Year 6 of 10 Year Local Transit Strategy
- Specialized accessible transportation review through fleet strategy



2023 - 2025

- Network redesign
- Years 7-10 Local Transit Strategy
- Moving towards zero emissions



Bayfront bus on James St.

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2021 METRICS & HIGHLIGHTS

- 8 electric vehicles
- **32.4%** commercial vehicle operator's registration (CVOR) rating
 - Winter 2019 CVOR at 84.5%
- Green fleet electric vehicle conversion
- Green fleet strategy expected to reduce GHG's by 18.4% by 2024
- Funding grant approval from Natural Resource Canada (NRCan) for electric vehicle infrastructure for \$300,000



Electric sweeper





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CURRENT TRENDS & ISSUES

- Electric vehicle purchases will require more charging stations
- Yard study impacts to fleet maintenance operations locations and fuel site infrastructure
- Converting all diesel vehicles by 2030
- Increase in fuel costs







LOOKING AHEAD 2022-2025

- Green Fleet Strategy Implementation:
 - 3 year forecast of **89** vehicles that can be replaced with battery electric vehicles
 - **49** electric charging stations to be installed
 - A pilot on the use of biodiesel to identify highest blend possible
 - Eco Driving and Anti-Idling awareness campaigns and training for all fleet operators
- Conversion of **10** waste packers from diesel to natural gas



Electric street sweeper



Fleet vehicle



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ENERGY Hamilton





2021 KEY METRICS

- **35%** energy intensity reduction in corporate buildings since 2005
- 42% GHG emission reductions since 2005
- 21,800 MWH electricity produced (Woodward and Glanbrook)



PROJECT HIGHLIGHTS

- Completing Energy and GHG reduction projects
- Global adjustment benefit
- Energy efficient upgrades to 3 pools and domestic water heating
- Latest version of Corporate Energy & Sustainability Policy approved



Ryerson Pool





CURRENT TRENDS & ISSUES

- Council declared Climate Change
 Emergency
- Investigation of actions to achieve netzero carbon emissions by 2050
- Community Energy & Emissions Plan
- Carbon tax increases impacting natural gas and fuels (diesel and gasoline)
- Volatility of utilities and commodities
 - Volatility especially around extreme weather events



MRF LED lighting



Solar Panels at 330 Wentworth





LOOKING AHEAD 2022-2025

- Focus on pathway to Net Zero in Corporate buildings by 2050
- Renewable energy opportunities (solar, renewable, natural gas)
 - Corporate sites
 - Hamilton Renewable Power operations
- Stakeholder roles on:
 - Community Energy & Emission Plan
 - Corporate Climate Change Task
 Force
 - Public Works Resiliency Plans



Parkdale Pool



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CORPORATE SECURITY





2021 KEY METRICS & HIGHLIGHTS

- 44 mass gatherings in public spaces
- 85% decrease in the number of trespass to properties from 2020
- 116,013 security guard service hours:
 - 21% are directly related to COVID services
 - 14% directly related to services ondemand
- 1,400+ service calls responded to

CORPORATE SECURITY

- Security trends continue to change
- Creation of the Security Staff Advisory
 Committee
- Security Awareness Training
- Site security upgrades and perimeter fencing at the HSR Mountain Transit Centre





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FACILITIES NARGENEND

PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022



2021 KEY METRICS

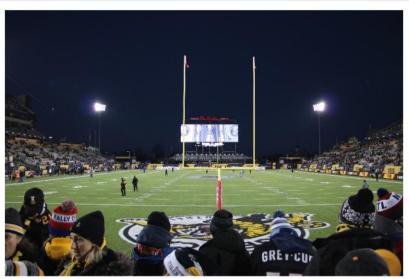
- **20,624** preventative maintenance work orders
- 22,325 on-demand work orders
- 42,949 total work orders issued

FACILITIES MANAGEMENT PROJECT HIGHLIGHTS

- 2nd year of operation of 125 Barton St.
 Facility Yard to a centralized COVID-19
 Supply Distribution Warehouse
- 108th Grey Cup @ Tim Hortons Field









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108th Grey Cup



FACILITIES MANAGEMENT

CURRENT TRENDS & ISSUES

- Facility condition index (FCI) **9.45%** overall rating fair state of repair
- On going review of aging infrastructure including roof replacements and mechanical upgrades/replacements



Rosedale tennis club roof

Overall Facilities Condition Index (FCI) across 500+ facilities is 9.45% (Fair)



Facility Condition Index

0-5%	5-10%	10-30%	>30%
Good	Fair	Poor	Critical



PUBLIC WORKS 2022 OPERATING BUDGET January 26, 2022

FACILITIES MANAGEMENT

LOOKING AHEAD 2022-2025

- Continue improving indoor air quality initiatives through air purification systems
- Priority roof replacements and mechanical upgrades





Mount Hope library roof

Inch Park arena roof

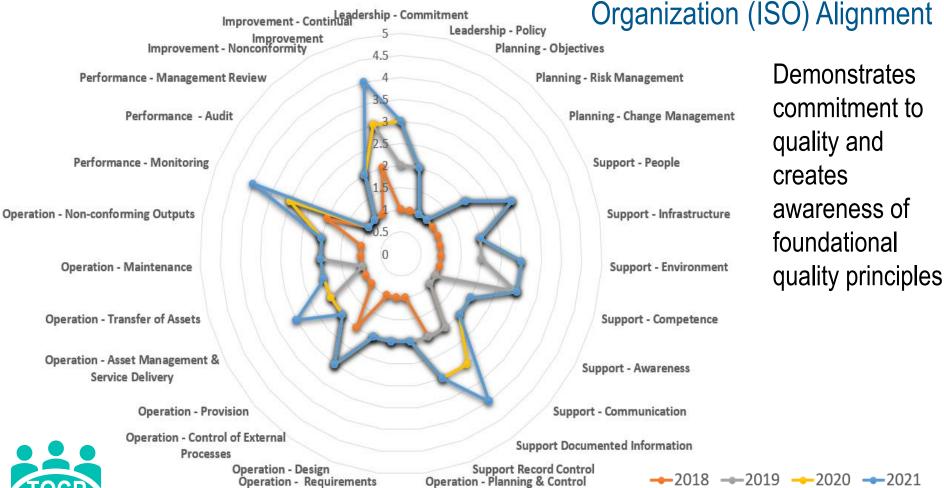






PUBLIC WORKS QUALITY MANAGEMENT SYSTEM

Assessment Tool for International Standards





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2021 KEY HIGHLIGHTS

- Departmental Training Framework
- Departmental Internal Audit Program
- PW QMS Non-Conformance Process
- PW QMS Document Management for Emergency Response





PUBLIC WORKS QUALITY MANAGEMENT SYSTEM LOOKING AHEAD 2022-2025

- Departmental audit program launch
- Transfer of assets process implementation
- Quality objectives identification
- Risk management process implementation
- Management review process developed
- Change management
- Vendor management

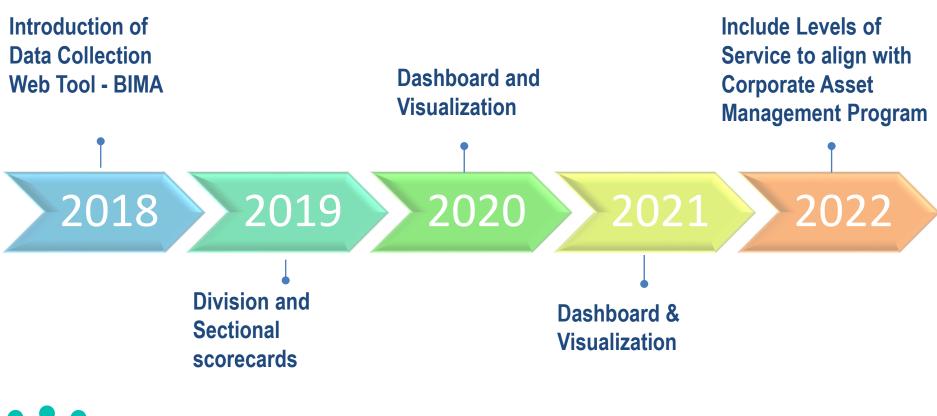




PERFORMANC Page 83 of 132 MEASUREMENT



PERFORMANCE MEASUREMENT PROGRAM







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PERFORMANCE MEASUREMENT PROGRAM

HIGH-PERFORMING KPIs



Objective	Metric	Target	YTD	Health
Transit – Cancelled Service	% of scheduled service cancelled due to no operator available	0	0	R
WWTP Regulatory Compliance	Number of instances effluent not compliant with regulatory standards (limit / daily loading) for Woodward & Dundas	0	0	R
Safety - CVOR	Average CVOR (Commercial Vehicle Operator's Rating) Safety Rating (%)	49.9%	32.4%	R
Purchasing Policies	Total number of Policy 19 Occurrences	12	5	R
Traffic – Street Light Inspections	% street light inspections completed to MMS standards (4443)	100	100	R



PERFORMANCE MEASUREMENT PROGRAM

OPPORTUNITIES FOR IMPROVEMENT KPIs

As of January 7, 2022

Objective	Metric	Target	YTD	Health
Small drinking water systems	Small drinking water systems - # of adverse conditions	0	2	
Drinking Water Quality	Maintain zero confirmed adverse water quality incidents (AWQIs)	0	11	
Safety - Lost time	Number of days lost as a result of workplace accident	0	1638	

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CLINATE CHANGE ACTION



CLIMATE CHANGE ACTION

2021 HIGHLIGHTS

- Supported Corporate Community Energy & Emissions
 Plan and Climate Impact Adaptation Plan
- Completed climate actions inventory for Public Works identified 275 initiatives related to climate change adaptation and mitigation
- Partnered with 5 GTHA municipalities to complete an adaptation pilot to analyze acute and chronic climate related stressors on vertical and linear infrastructure
- Completed 3 student based CityLab projects
- Completed a framework for an inaugural climate education program



CNG Vehicles for Waste Collection



Anti-Idling Campaign





LOOKING AHEAD 2022

- First climate lens
- Completion of first annual resiliency assessment
- Complete Public Works climate strategy that aligns with Community Energy & Emissions Plan and Climate Impact Adaptation Plan
- Public Works second climate summit

2023 - 2025

• Launch of the innovation incubator and climate futures program





CLIMATE CHANGE ACTION

CLIMATE CHANGE PROJECTS

- Hamilton Parks Master Plan
- Tree Planting Program
- Cycling Infrastructure

Hamilton

- Landfill Gas (LFG) collection system expansion (Stage 3)
- CNG Vehicles for waste collection
- Waste collection anti-idling campaign
- Flooding and drainage improvement framework servicing review
- Stormwater modelling to support climate adaptation
- Beach Blvd environmental assessment



Sam Lawrence park



CNG fueling

CLIMATE CHANGE ACTION **CLIMATE CHANGE PROJECTS**



Hunter Street cycling infrastructure



York Boulevard cycling infrastructure



Beach Boulevard



Bayfront Park

CONTINUOUS Page 92 of 132 INFORMATION OF THE PAGE 92 of 132



CONTINUOUS IMPROVEMENT

2021 HIGHLIGHTS







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CORPORATE ASSET



ANNE STREET, STREE



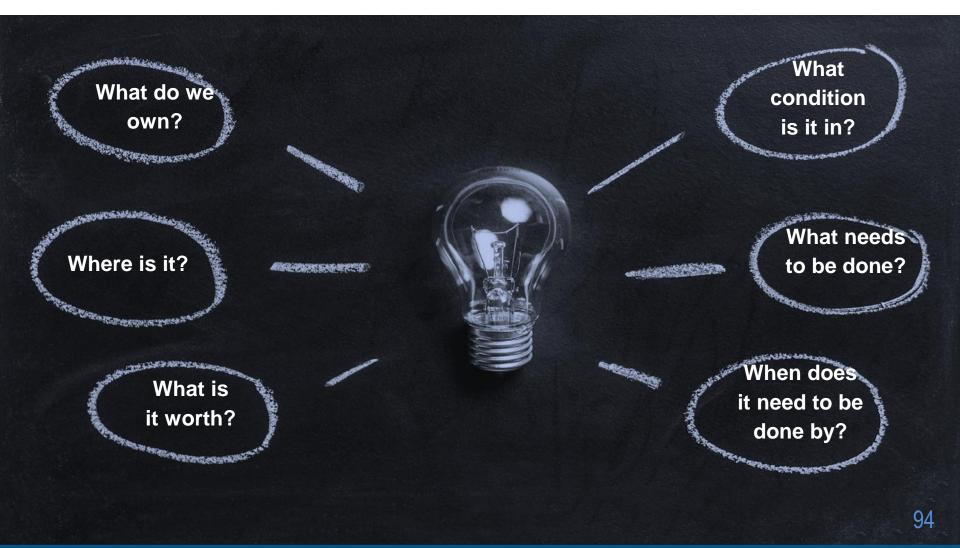
FIRE-RES

WHAT IS AN ASSET?

Assets provide services that contribute to our quality of life



ASSET MANAGEMEnt of S...





Asset management is a process used in decision-making.

It helps us care for the infrastructure that delivers valuable services to our community, in a way that:

- Considers service needs
 of our community
- Manages risks and opportunities
- Uses resources wisely

WHY IT MATTERS?

- A process
- A journey
- An approach
- A way of doing business





ASSET MANAGEMENT

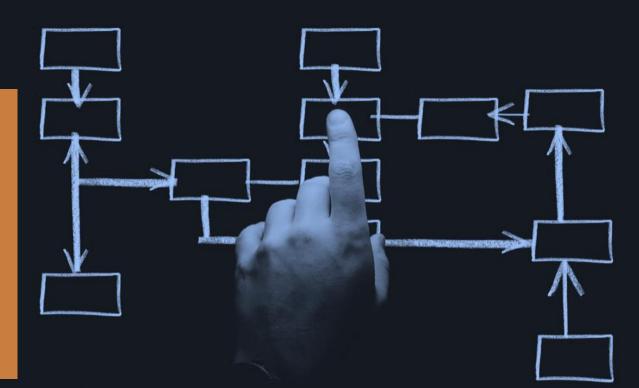
gives us the empirical evidence so we can...

- Do the right thing
- To the right asset
- At the right time
- For the right cost



WE NEED A SYSTEM THAT HELPS...

- Maintain the delivery of services
- Plan for the future
- Manage risk
- Budget smartly





Council needs information about asset performance, risk and cost to set direction.





PUBLIC WORKS 2022 OPERATING BUDGET JANUARY 26, 2022

ASSET MANAGEMENT AT THE CITY OF HAMILTON

In recent years, the discipline of Asset Management has evolved. Hamilton needs to catch up ...

THEN

A focus on the implementation of managing asset activities (e.g. condition assessments).

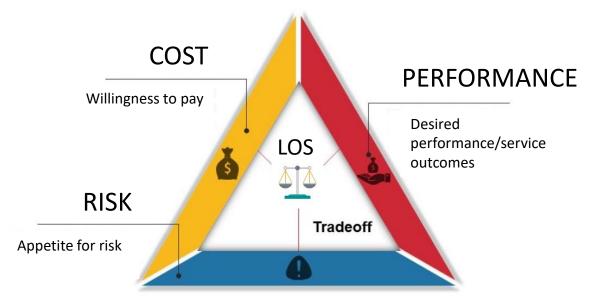
NOW

All the activities and practices an organization applies to assets in order to achieve its strategic objectives.



PUBLIC WORKS 2022 OPERATING BUDGET JANUARY 26, 2022

FUTURE STATE – BALANCING COST, RISK AND PERFORMANCE



- Desired levels of service will be achieved through the balance of cost, risk and performance.
- Prioritization of funds becomes critical in order to ensure the best balance is achieved.
- Must find the balance that delivers the greatest value to the City.



ASSET MANAGEMENT FRAMEWORK

Investors

Commercial Environment



Legislation

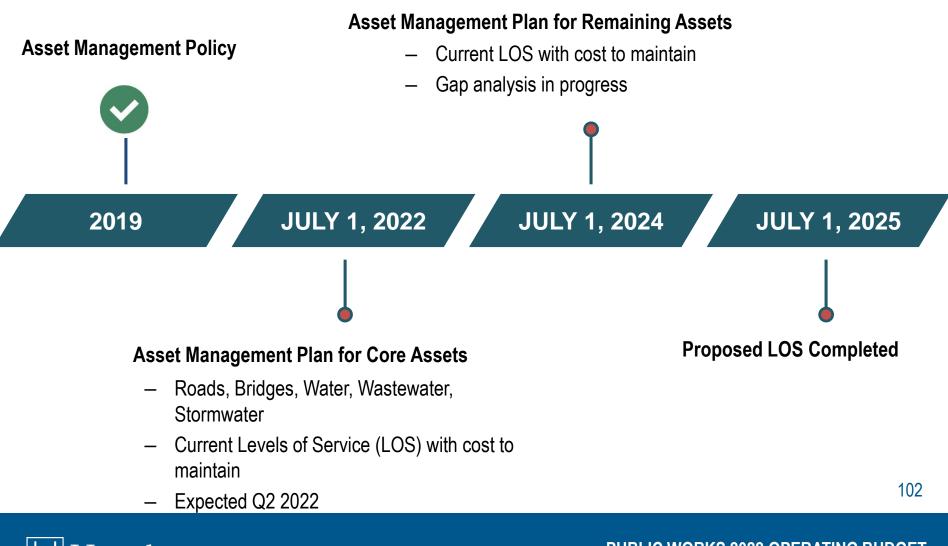
Customers

Source: Institute of Asset Management



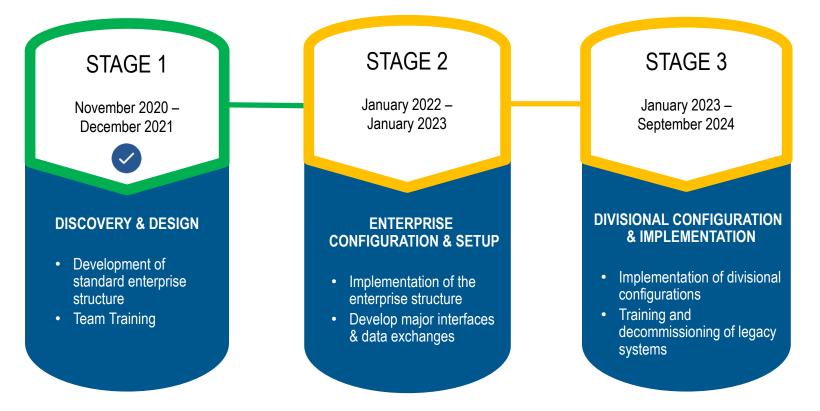
PUBLIC WORKS 2022 OPERATING BUDGET JANUARY 26, 2022

ONTARIO REGULATION 588/17 MANDATES



Hamilton

ENTERPRISE ASSET MANAGEMENT PROJECT UPDATE



- Significant opportunity for improved asset management and higher quality service delivery with less cost.
- Project has identified the opportunity to standardize 47 process flows across Public Works.



SHARED ISSUES & TRENDS



PUBLIC WORKS 2022 OPERATING BUDGET JANUARY 26, 2022

SHARED TRENDS & TSUES

ACROSS PUBLIC WORKS

Human Resources

- Recruitment of skilled labour
- Managing vacancies
- Student hiring

Shared Issues

- COVID-19 impacts
- Redeployments
- Supply chain challenges
- Rising construction costs
- Inflationary pressures
- Contract pressures



Coordination of funding opportunities (ICIP, DMAF)

- Shared Projects & Initiatives
 - Excess soils
 - LRT
 - Consolidated linear infrastructure Environmental Compliance Approval (ECA)
 - Enterprise asset management
 - Project management standardization
 - Corporate asset management
 - Quality management

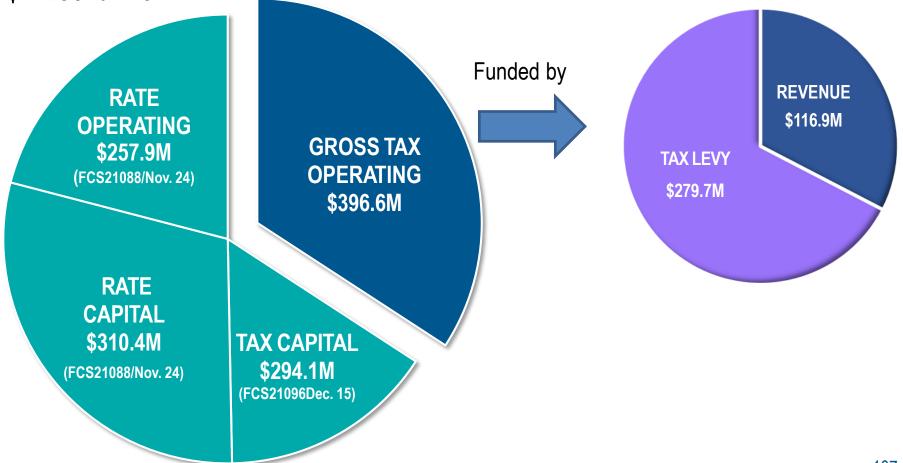


Page 108 of 132 2022 PRELIMINARY TAX OPERATING BUDGEI



Page 109 of 132 2022 GROSS BUDGET

2022 Gross Capital and Operating Budgets **\$1.259 billion**

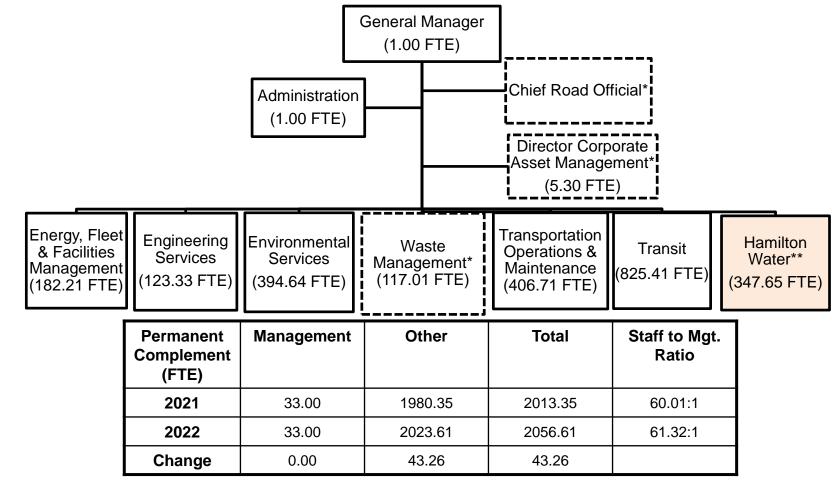




PUBLIC WORKS 2022 OPERATING BUDGET JANUARY 26, 2022

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ORGANIZATIONAL CHART



- * 3.0 Director positions are excluded from the 2022 Budgeted Complement count. The positions are currently temporary and not counted as part of the permanent FTE Complement. If positions were included the Staff to Mgt Ratio would be 56.21:1
- ** Complement excludes Hamilton Water



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2022 OPERATING BUDGET BY DIVISION

2022 vs 2021 Net Change

	2021	2022	2022		
	Restated	Preliminary	Preliminary	\$	%
	Budget Net	Budget Gross	Budget Net		
PW-General Administration	634,870	658,900	658,900	24,030	3.8%
Energy Fleet and Facilities	13,273,690	21,946,730	14,276,080	1,002,390	7.6%
Engineering Services	-	21,743,950	-	-	0.0%
Environmental Services	44,240,900	48,556,680	45,582,310	1,341,410	3.0%
Waste Management	44,104,610	62,013,470	46,944,820	2,840,210	6.4%
Transit	80,834,700	150,197,660	87,972,010	7,137,310	8.8%
Transportation Operations & Maintenance	83,485,680	91,441,190	84,234,120	748,440	0.9%
Total Public Works	266,574,450	396,558,580	279,668,240	13,093,790	4.9%
Proposed Amendment - Waste Managemer	nt: Blue Box Munici	pal Funding Alloca	tion	(573,940)	(0.2%)
Total Public Works - Less Proposed Amen	dment			12,519,850	4.7%



2022 KEY BUDGET DRIVERS

Ц	Year 5 Annualization + Year 6 of the 10 Year Local Transit Strategy	\$	4,144,000
TRANSIT	PRESTO Agreement	\$	381,000
Ħ	Transit Fleet Reserve Inflationary Increase	\$	230,000
-			
EFFM	Tim Hortons Field Pressures	\$	487,000
	Curbside Waste Collection Contract	\$	1,969,250
MGMT	Materials Recycling Facility Contract	\$	246,380
TEN	Hazardous & Speciality Products Regulation Subsidy Reduction	\$	202,000
WASTE	Transfer Station / Community Recycling Centres (TS / CRC) Contract	\$	293,420
	TS / CRC Tipping Fee, Municipal Blue Box Funding & Recycling Commodities Revenue Adjustment Increases	\$	(1,084,610)
	Winter Program Adjustment Decrease	\$	(1,450,000)
TOM	Sidewalk Snow Clearing (Option 2A total incremental cost is \$2.34M. 2022 Budget \$936K {Nov, Dec} and 2023 Budget \$1.404M {Jan, Feb, Mar})	\$	936,000
	Catch Basin Cleaning, Grass Cutting & Phragmite Control Contract Pressures	\$	325,000
Н	Employee Related Costs - Excludes ERC related to Transit Strategy	\$	3,790,320
PW-ALL	Fuel (Budgeted at 1.10/L, pressure \$750K partially mitigated by tax stabilization reserve)	\$	375,100
Р	Insurance and Vehicle Insurance Charges	\$	663,300
	() Denotes budget savings / re	even	ue increases



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	Multi-Year Outlook					
	202	23	202	24	202	25
	Budget % Change		Budget	% Change	Budget	% Change
	\$	from 2022	\$	from 2023	\$	from 2024
Total Public Works - Tax Net Levy	292,656,810	4.6%	303,918,900	3.8%	315,676,630	3.9%
Key Transit Drivers:						
DARTS Ridership Growth	-		1,820,000		1,950,000	
10 Year Transit Strategy (Net)	3,315,000		3,085,000		3,577,000	
PRESTO Maintenance Agreement	189,000		208,000		187,000	
Transit Fleet Reserve Inflationary Increase	252,800		276,490		302,240	
Key Waste Management Drivers:						
Various Contractual Agreements	1,153,900		1,297,590		1,241,630	
Key Transportation Operations & Maintenance	Drivers:					
Sidewalk Snow Clearing	1,404,000		46,800		47,740	

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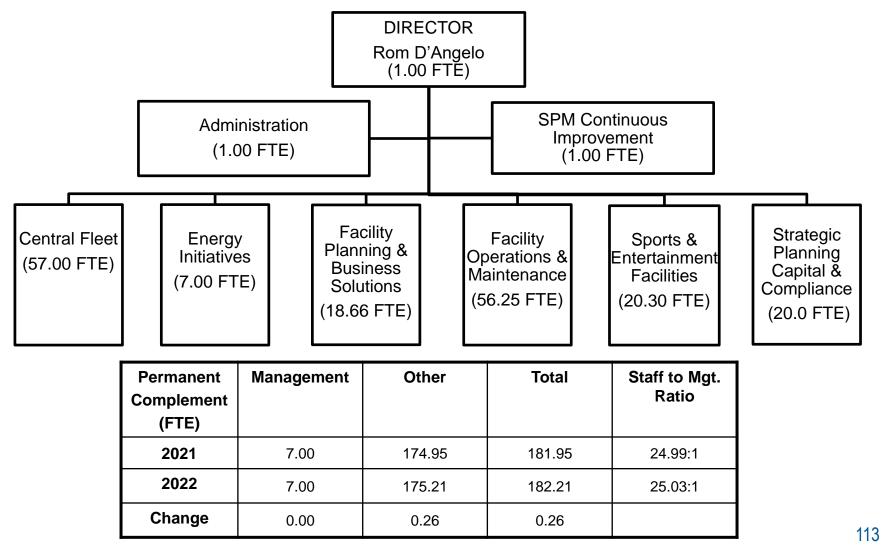
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2022 PRELIMINARY TAX OPERATING BUDGET-Divisions



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ENERGY, FLEET & FACILITIES MANAGEMENT





2022 OPERATING BUDGET ENERGY, FLEET & FACILITIES MANAGEMENT

Energy Fleet and Facilities

	2021	2022	2022	2022 Preliminary 2021 Restated	•
	Restated Budget Net	Preliminary Budget Gross	Preliminary Budget Net	Change \$	Change %
Fleet Services	62,630	1,652,400	147,780	85,150	136.0%
Corporate Facility Ops & Tech	2,000,660	2,964,940	1,813,140	(187,520)	(9.4)%
Facilities Planning and Business Solutions	948,010	1,807,310	1,218,840	270,830	28.6%
Community Facility Ops & Tech Serv	6,609,990	6,572,820	6,551,310	(58,680)	(0.9)%
Sports & Entertainment Facilities	3,097,410	6,710,860	3,696,350	598,940	19.3%
Director EFF	312,560	488,750	465,550	152,990	48.9%
Energy Initiatives	0	1,366,530	0	0	0.0%
Strategic Plan & Capital Compliance	242,430	383,110	383,110	140,680	58.0%
Total Energy Fleet and Facilities	13,273,690	21,946,720	14,276,080	1,002,390	7.6%





2022 ENERGY, FLEET & FACILITIES MANAGEMENT BUDGET DRIVERS

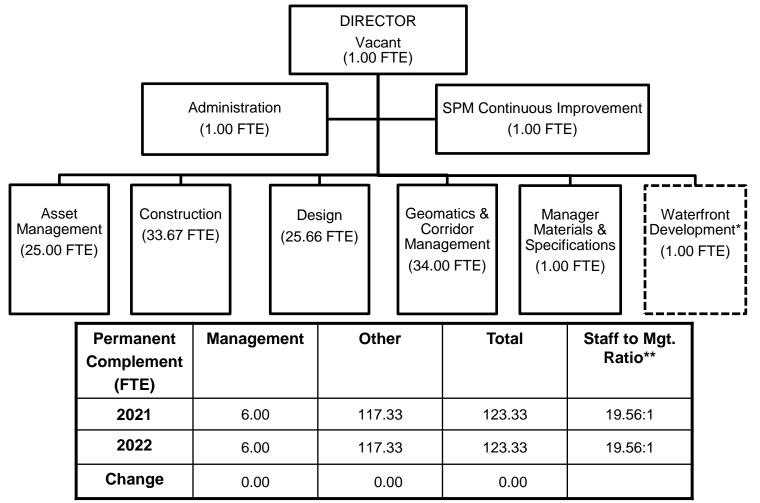
ltem	Impact (\$000)
Tim Hortons Field Contract Pressures	\$487
Contract Pressures Facilities	\$148
Employee Related Costs	\$535
Recoveries from Capital	\$404
Fuel (Budgeted at 1.10/L, pressure \$101K partially mitigated by tax stabilization reserve)	\$79

() Denotes budget savings / revenue increases

Hamilton

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ENGINEERING SERVICES



 * 1.0 Manager position is excluded from the 2022 Budgeted Complement count. The position is currently temporary and not counted as part of the permanent FTE Complement. If position was included the Staff to Mgt Ratio would be 16.76:1 116



2022 OPERATING BUDGET ENGINEERING SERVICES

Engineering Services

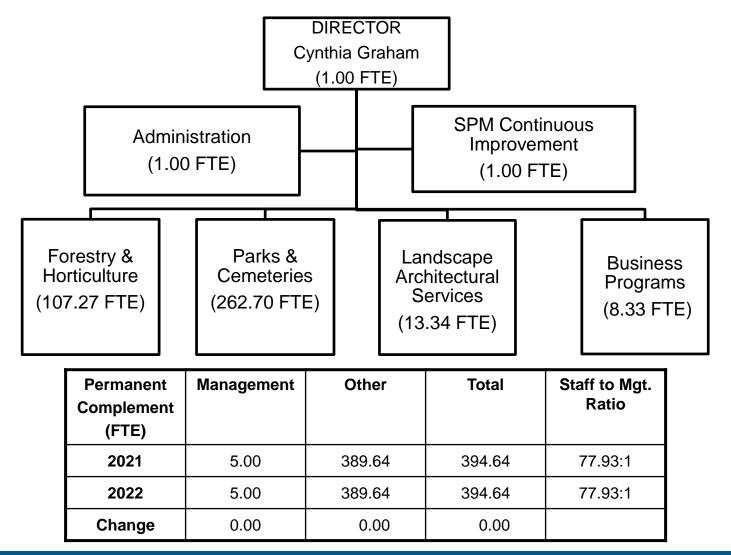
	2021 2022		2022	2022 Preliminary Budget Net vs. 2021 Restated Budget Net		
	Restated Budget Net	Preliminary Budget Gross	Preliminary Budget Net	Change \$	Change %	
Asset Management	0	3,764,670	0	0	0.0%	
Construction	0	4,822,430	0	0	0.0%	
Design Services	0	3,296,880	0	0	0.0%	
Director of Engineering Services	0	2,231,730	0	0	0.0%	
Geomatics and Corridor Management	0	7,255,950	0	0	0.0%	
Waterfront Development	0	372,290	0	0	0.0%	
Total Engineering Services	0	21,743,950	0	0	0.0%	

• Costs are mainly recovered from capital

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Page 120 of 132 ENVIRONMENTAL SERVICES



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2022 OPERATING BUDGET ENVIRONMENTAL SERVICES

Environmental Services

	2021	2021 2022		2022 Preliminary Budget Net vs. 2021 Restated Budget Net	
	Restated Budget Net	Preliminary Budget Gross	Preliminary Budget Net	Change \$	Change %
Business Programs	994,170	1,187,170	1,187,170	193,000	19.4%
Director Environ Services	(551,070)	(551,070)	(551,070)	0	0.0%
Forestry & Horticulture	14,175,850	14,852,830	14,399,710	223,860	1.6%
Landscape & Architectural Serv	119,590	274,350	274,350	154,760	129.4%
Parks & Cemeteries	29,501,290	32,793,400	30,272,150	770,860	2.6%
Total Environmental Services	44,239,830	48,556,680	45,582,310	1,342,480	3.0%



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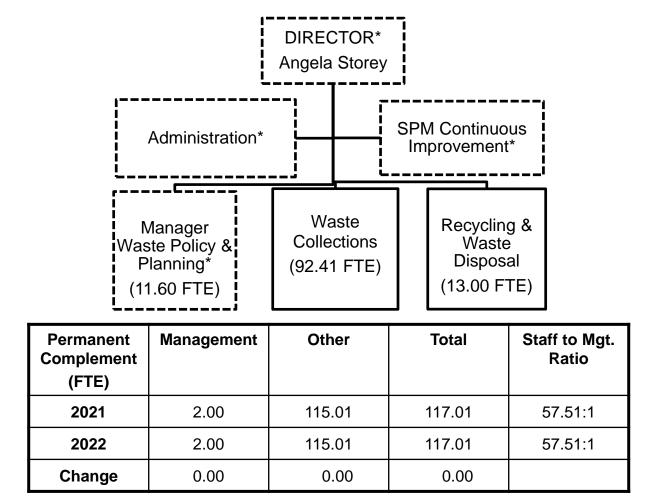
2022 ENVIRONMENTAL SERVICES BUDGET DRIVERS

Item	Impact (\$000)
Employee Related Costs	\$985
Fuel (Budgeted at 1.10/L, pressure \$65K partially mitigated by tax stabilization reserve)	\$30

() Denotes budget savings / revenue increases

Hamilton

WASTE MANAGEMENT



* 4.0 positions are excluded from the 2022 Budgeted Complement count. The positions are currently temporary and not counted as part of the permanent FTE Complement. If Management positions were included the Staff to Mgt Ratio would be 28.75:1



2022 OPERATING BUDGET WASTE MANAGEMENT

Waste Management

	2021	2022	2022	2022 Preliminary Budget Net vs. 2021 Restated Budget Net		
	Restated Budget Net	Preliminary Budget Gross	Preliminary Budget Net	Change \$	Change %	
Recycling & Waste Disposal	6,944,210	22,452,140	7,431,960	487,750	7.0%	
Waste Collections	35,764,650	38,100,010	38,065,080	2,300,430	6.4%	
Waste Policy & Planning	1,545,750	1,611,330	1,597,790	52,040	3.4%	
Director Waste	(150,000)	(150,000)	(150,000)	0	0.0%	
Total Waste Management	44,104,610	62,013,480	46,944,830	2,840,220	6.4%	
Proposed Amendment - Blue Box Mun	nicipal Funding Allocati	on		(573,940)	(1.3)%	

Total Waste Management - Less Proposed Amendment	2,266,280	5.1%



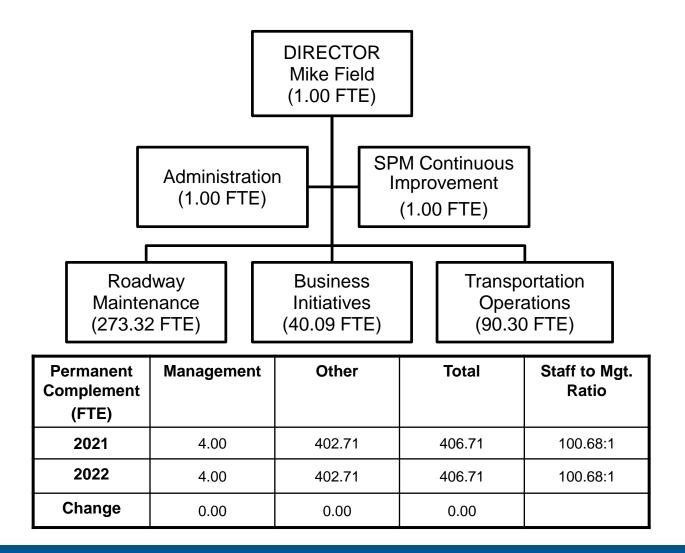
2022 WASTE MANAGEMENT BUDGET DRIVERS

Item	Impact (\$000)
Curbside Waste Collection Contract	\$1,969
Transfer Station / Community Recycling Centres (TS / CRC) Contract	\$293
Materials Recycling Facility Contract	\$246
Hazardous & Specialty Products Regulation Subsidy Reduction	\$202
Fuel (Budgeted at 1.10/L, pressure \$65K partially mitigated by tax stabilization reserve)	\$30
Employee Related Costs	\$131
TS / CRC Tipping Fee & Recycling Commodities Revenue Adjustment Increases	(\$511)
Increased Blue Box Municipal Funding Allocation	(\$574)

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() Denotes budget savings / revenue increases

TRANSPORTATION OPERATIONS & MAINTENANCE



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2022 OPERATING BUDGET TRANSPORTATION OPERATIONS & MAINTENANCE

Transportation Operations & Maintenance

	2021	2021 2022	2022	2022 Preliminary Budget Net vs. 2021 Restated Budget Net	
	Restated Budget Net	Preliminary Budget Gross	Preliminary Budget Net	Change \$	Change %
Roadway Maintenance	63,784,480	65,856,270	63,876,840	92,360	0.1%
Director – Trans Ops & Mtce	(629,950)	(622,000)	(622,000)	7,950	1.3%
Transportation Operations	15,843,200	21,534,130	16,367,080	523,880	3.3%
Business Initiatives	4,487,950	4,672,780	4,612,190	124,240	2.8%
Total Transportation Operations & Maintenance	83,485,680	91,441,180	84,234,110	748,430	0.9%



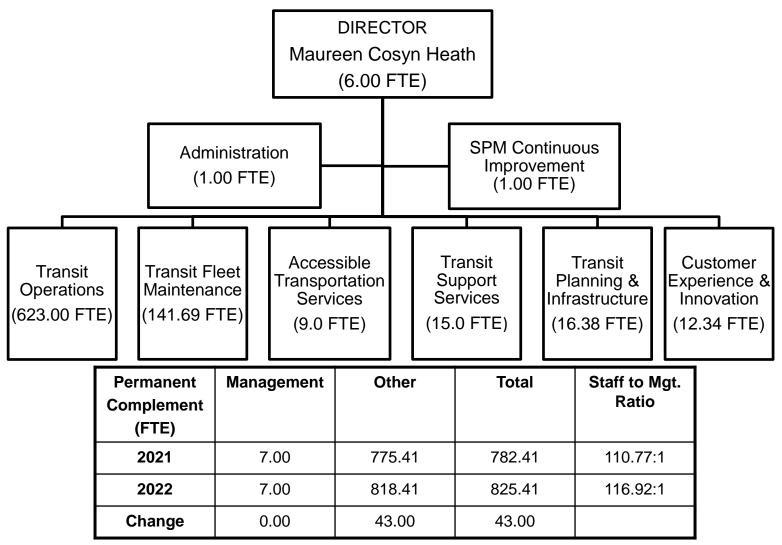


2022 TRANSPORTATION OPERATIONS & MAINTENANCE BUDGET DRIVERS

Item	Impact (\$000)
Sidewalk Snow Clearing	\$936
Employee Related Costs	\$442
Catch Basin Cleaning, Grass Cutting & Phragmite Control Contract Pressures	\$325
Insurance and Vehicle Insurance Charges	\$173
Fuel (Budgeted at 1.10/L, pressure \$308K partially mitigated by tax stabilization reserve)	\$140
Winter Program Adjustment Decrease	(\$1,450)

() Denotes budget savings / revenue increases







PUBLIC WORKS 2022 OPERATING BUDGET JANUARY 26, 2022

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2022 OPERATING BUDGET TRANSIT

Transit

	2021	2021 2022 2022		2022 Preliminary Budget Net vs. 2021 Restated Budget Net	
	Restated Budget Net	Preliminary Budget Gross	Preliminary Budget Net	Change \$	Change %
Customer Experience and Innovation	1,639,560	1,841,070	1,841,070	201,510	12.3%
Transit Planning and Infrastructure	3,110,870	3,161,870	3,161,870	51,000	1.6%
Support Services	1,801,990	1,785,830	1,784,810	(17,180)	(1.0)%
Director Of Transit	140,730	627,860	627,860	487,130	346.1%
Financial Charges & General Revenue	(33,457,140)	17,999,300	(34,474,040)	(1,016,900)	(3.0)%
Operations HSR	51,355,470	62,760,340	55,859,980	4,504,510	8.8%
Transit Fleet	31,938,300	35,112,400	34,787,770	2,849,470	8.9%
ATS	24,304,920	26,908,980	24,382,680	77,760	0.3%
Total Transit	80,834,700	150,197,650	87,972,000	7,137,300	8.8%



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2022 TRANSIT BUDGET DRIVERS

Item	Impact (\$000)
Year 5 Annualization + Year 6 of the 10 Year Local Transit Strategy	\$4,144
Employee Related Costs – Excludes Year 5 Annualization + Year 6	\$1,158
Fuel – Natural Gas	\$657
Insurance and Vehicle Insurance Charges	\$448
PRESTO Operating Agreement	\$381
Transit Fleet Reserve Inflationary Increase	\$230
Fuel (Budgeted at 1.10/L, pressure \$204K partially mitigated by tax stabilization reserve)	\$89

() Denotes budget savings / revenue increases

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THANK YOU