



# W&WW Master Plan Review



Council Presentation

June 23<sup>rd</sup>, 2025

# Project Objectives – Master Plan Review

Optimize infrastructure investment priorities to support long-term service delivery and encourage growth in the community.

## Objectives:

**1** Review the Master Plan and other key documentation.

**2** Develop actionable recommendations and risk observations.

**3** Identify constraints, risks and opportunities.

**4** Develop high-level alternatives and phasing options.

# Challenges

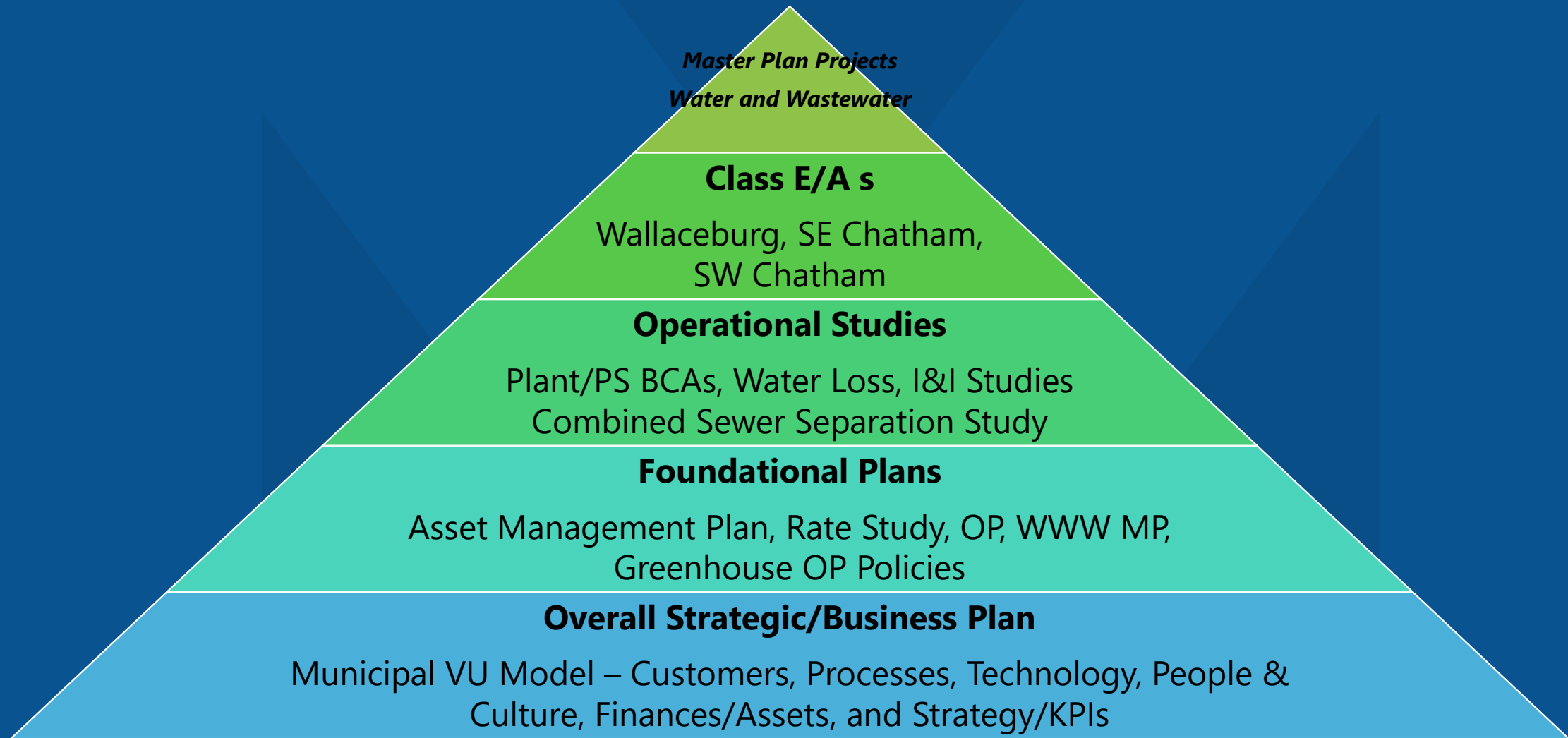
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- WWW Master Plan capital forecast unaffordable
- Water and wastewater facilities have competing investment needs between Growth vs State of Good Repair (SOGR)
- Limited growth in the past and now growth is requiring huge investment due to Provincial pressures and housing crisis
- Wallaceburg WTP costs continue to escalate
- Agricultural greenhouse demands, and DC discounts are not sustainable
- Some disconnect between PUC and Municipal Staff directions
- Resource opportunities not fully utilized

# Project Approach



# Hierarchy of Plans, Studies & Recommendations



# Master Plan Projects



**Master Plan Projects**  
Water and Wastewater

# Master Plan Project Summary/ Recommendations

Proceed:

System	Short Term 0-5 Years	Interim Term 5-10 Years	Long Term > 10 Years	On an individual system basis
Water	\$25.9 M	\$54.2 M	\$0 M	\$0 M
Wastewater	\$6.0 M	\$5.9 M	\$1.7 M	\$0 M
<b>Total</b>	<b>\$31.9 M</b>	<b>\$60.1 M</b>	<b>\$1.7 M</b>	<b>\$0.0 M</b>

Total Master Plan  
Projects are  
\$972.9M

\$93.7

- **Ridgetown/Highgate Water Supply Improvements**
  - Transmission from Chatham, Storage Reservoir and Pumping Station
- **South Chatham Kent Water Supply Improvements**
  - Charing Cross to Blenheim, Improve system linkages/pressure
- **Wheatley/Tilbury Water Supply Improvements**
  - New Pumping Station from Wheatley to Tilbury, Decommission old reservoir/pump station
- **Chatham Wastewater Collection System**
  - Chatham main lift station and Pump Station 103 (Campus and Grand Ave)
- **Wastewater Treatment Plan SOGR**
  - Immediate needs at Wallaceburg, Blenheim, Dresden, Merlin, Mitchell's Bay, Ridgetown, Tilbury and Wheatly

# Master Plan Project Summary/ Recommendations

Pause until further investigation, probably will proceed:

System	Short Term 0-5 Years	Interim Term 5-10 Years	Long Term > 10 Years	On an individual system basis
Water	\$0.0 M	\$13.7 M	\$9.7 M	\$0.0 M
Wastewater	\$19.4 M	\$24.3 M	\$218.4 M	\$0.0 M
<b>Total</b>	<b>\$19.4 M</b>	<b>\$38.0 M</b>	<b>\$228.1 M</b>	<b>\$0.0 M</b>

Largest \$\$\$ in the longer-term post 10 years

**\$285.5**

- **Chatham/Bothwell Water System**
  - New watermains for Thomasville, Delaware Nation, Bothwell, and Kent Bridge for pressure
- **Wallaceburg Wastewater Collection System**
  - Upgrades to Pumping Stations 401, 402, 405 for SOGR and Capacity
- **Chatham Pollution Control Plan**
  - SOGR, Effluent improvements, Process improvements and Sludge management
- **Wastewater Treatment Plan SOGR**
  - Mid to long term needs at Wallaceburg, Blenheim, Dresden, Merlin, Mitchell's Bay, Ridgetown, Tilbury and Wheatly

# Master Plan Project Summary/ Recommendations

Stop, study and potential different solution:

System	Short Term 0-5 Years	Interim Term 5-10 Years	Long Term > 10 Years	On an individual system basis
Water	\$84.3 M	\$242.6 M	\$41.8 M	\$0.0 M
Wastewater	\$0.0 M	\$0.0 M	\$0.0 M	\$225.0 M
<b>Total</b>	<b>\$84.3 M</b>	<b>\$242.6 M</b>	<b>\$41.8 M</b>	<b>\$225.0 M</b>

Largest \$\$\$ in the short and medium-term

**\$593.7**

- **Wallaceburg Water Supply System**
  - New Water Treatment Plan, New Storage Reservoir and Trunk to Dresden, New Raw Water main, New Intake, and Low Lift Pumping Station
- **Chatham Water Supply System**
  - Upgrade to Chatham Plant to increase Capacity, New Intake, New High Lift Pumping Station, New Transmission Main
- **Combined Sewer System**
  - Separation of combined sewers and projects to reduce CSO

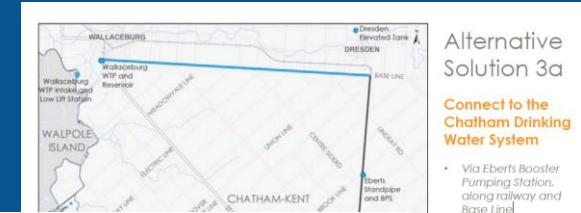
# Class E A s

## Class E/A s

Wallaceburg, SE Chatham,  
SW Chatham

# Wallaceburg EA

- 2012 Dillon Water/Wastewater Masterplan identified a pipe from Chatham as the preferred solution to supply water to Wallaceburg
- 2016 Stantec E/A identified option 3a – Pipe from Chatham as preferred solution and reversed that due to community concerns
  - Landed on upgrade existing Wallaceburg plant as preferred solution
  - Pipe Option was \$11.9M with inflation most likely +/- **\$20M**
  - Jacobs identified upgrading existing Wallaceburg as \$26 M and new intake at the same location as an additional \$10M, from the 2022 E/A estimates – **Total \$36M**
- 2023 Jacobs E/A identified new 28MLD plant and new intake, as well as a supply line to Dresden to supply greenhouses at a cost of \$117M with inflation +/- **\$150M now**



Alternative Solution 3a

Connect to the Chatham Drinking Water System

- Via Eberth Booster Pumping Station, along railway and Base Line
- Terminating at the WTP site
- New 500mm watermain extension for approximately 18km to match current capacity of Wallaceburg WTP



Lifecycle Cost Ranking

Alternative	2014 Capital Cost	10 Year Cumulative Cost (Capital + O&M)	20 Year Cumulative Cost (Capital + O&M)	40 Year Cumulative Cost (Capital + O&M)	Lifecycle Cost Ranking
Alternative 2a: Rehabilitate the Existing WTP using the Existing Intake*	\$ 3,430,800	\$ 15,962,898	\$ 27,510,287	\$ 67,262,618	Highest
Alternative 3a: Connect to Chatham Drinking Water System Via Eberth BPS Along Base Line	\$ 11,906,940	\$ 15,957,619	\$ 15,741,769	\$ 37,523,446	Lowest
Alternative 3b: Connect to Chatham Drinking Water System Via Eberth BPS Along Centre Side Rd. and Base Line	\$ 13,442,738	\$ 17,493,416	\$ 21,277,567	\$ 39,059,243	Third Lowest
Alternative 3c: Connect to Chatham Drinking Water System Along Highway 40	\$ 16,796,025	\$ 19,934,050	\$ 22,697,106	\$ 37,716,779	Second Lowest
Alternative 3d: Connect to Chatham Drinking Water System Via Highway 40 with Interconnection from Mitchell's Bay	\$ 20,327,350	\$ 23,465,375	\$ 26,228,431	\$ 41,248,104	Second Highest

\*Alternative 2b is the same base cost PLUS cost of new intake  
 Denotes lowest cumulative cost  
 \*\*Cumulative Capital costs associated with Alt. 2a includes additional refurbishment/replacements required over the stipulated timeline based on lifecycle analysis. Costs exclude Construction Price Index (CPI)/inflation  
 \*\*\*Cumulative Capital costs associated with Alt. 3 options includes operating and maintenance costs

Table 13-2. Overall Cost Estimate for Preferred Solution and Design Concepts

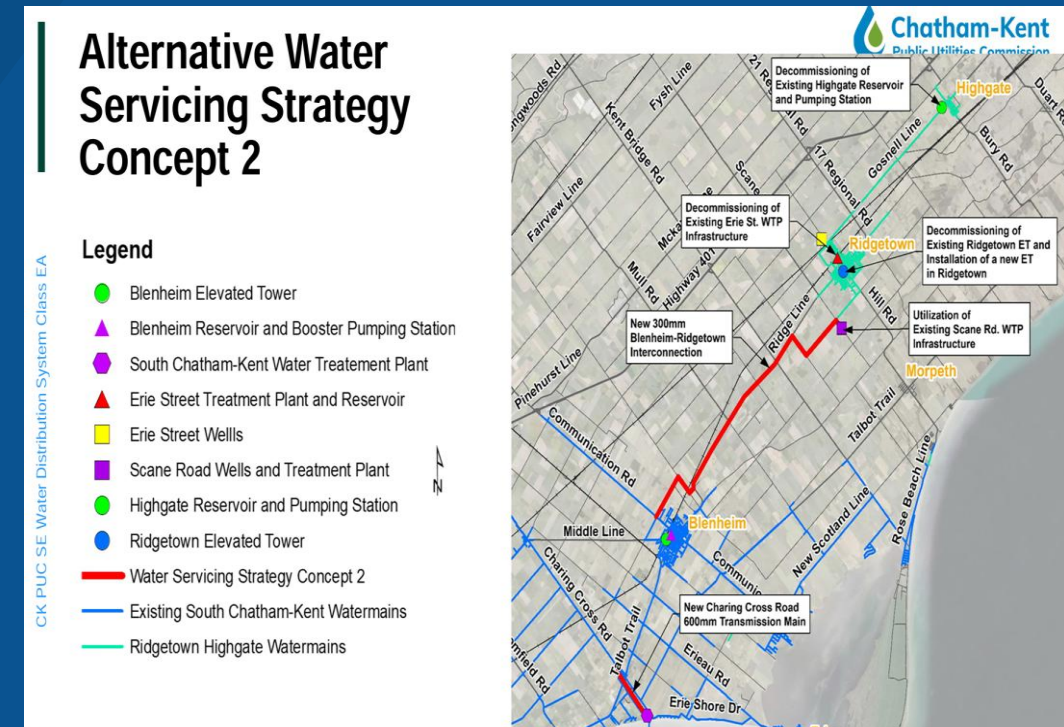
Component	Capital Cost Estimate
Wallaceburg WTP	\$39,300,000
Storage Reservoir (56 megalitres)	\$27,600,000
LLPS and Intake	\$7,900,000
Raw Watermain	\$9,500,000
Treated Water Transmission Main	\$32,800,000
Total	\$117,100,000

# Wallaceburg Recommendations

- Repair existing immediate concerns in Wallaceburg
  - Stantec identified \$3.4M with inflation probably +/- \$6M
- E/A rules changing in the near future – loosening requirements
  - Begin feasibility study to assess the pipe from Chatham solution
  - Begin feasibility study to utilize existing Wallaceburg Plan as a raw water pumping station for greenhouses – this should be 100% Grower's cost or grant from the Province
- Fallback position is to upgrade existing Wallaceburg Plant & Intake to existing community needs of 14 MLD
  - Jacobs E/A list the as \$26M for Plant and \$10M for intake, cost was from 2022 estimate
  - Greenhouse Official Plan Policy needed to establish rules around water servicing
- **Depending on timing of E/A rules, start a new E/A for Wallaceburg and Chatham Servicing together as one solution**

# Chatham SE (Ridgetown/Blenheim) EA

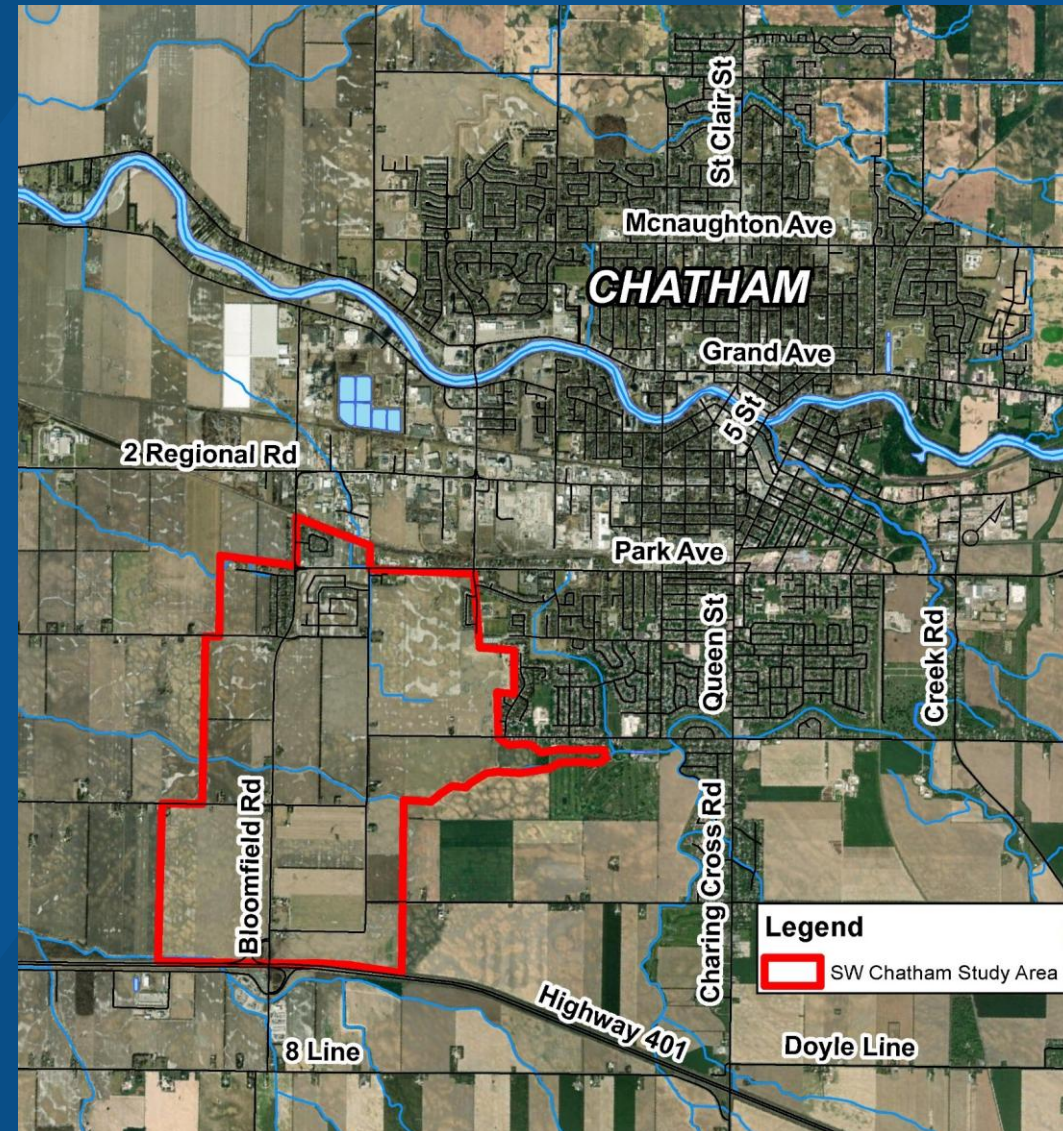
- The Ridgetown-Highgate ground water system has difficulty producing aesthetically pleasing water to meet future water demands
- The existing Blenheim inground reservoir (approx. 56 years old) and Ridgetown Elevated Tank (approx. 55 years old) are aging and require near term rehabilitation or replacement
- The existing South Chatham-Kent water transmission capacity is insufficient to fill the Blenheim inground reservoir. The 2024 Chatham-Kent Water Master Plan recommended a new 600mm Charing Cross Road Transmission main from the South Chatham-Kent Water Treatment Plant to Talbot Trail to increase transfer capacity for filling the Blenheim inground reservoir



- **Solution – Continue on with E/A and incorporate preferred strategy into Future Chatham Plant Expansion E/A (E/A underway and to be completed in Summer of 2025)**

# Chatham SW Growth and Servicing Study

- SW Chatham growth area with the potential for needed Industrial/Commercial areas and housing
- It is partly outside the urban boundary but is an important area for growth
- The servicing study started before master plan but was paused to get the outcomes of the master plan.
- Nothing was considered in the master plan for South-West Chatham.
- Next official plan update most likely will include the SW Chatham area.
- Ongoing communication and coordination happening between PUC and CK Staff
- Potentially upwards of **\$500M required by 2051** for W&WW (Road and Storm have not been include in this number)



# Operational Studies

## **Operational Studies**

Plant/PS BCAs, Water Loss, I&I Studies  
Combined Sewer Separation Study

# Water and Wastewater Facility Plans

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- PUC should **immediately** begin detailed condition assessments of all pumping stations and treatment facilities (both W & WW)
- Assessments should include both building envelope and process equipment needs
  - Need to assess the current state of assets and identify and prioritize risks to LOS
  - Large capital expenditures identified in the AECOM MP, without a lot of details
  - Develop detailed **10-year Facility Plans** for each major asset with estimated required cashflow
- **BCAs and condition assessments critical to ensuring best bang for the dollar and development of a comprehensive Asset Management Plan**

# Water Loss and I&I Studies

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- High water loss in many of the systems (15% to 55%)
  - PUC and CK have typically underfunded distribution system maintenance
  - Water loss may be leaks as well as operational flushing, etc.
- AECOM Master Plan identified numerous locations for collection system upsizing in several communities to reduce the impact of larger more intense storm events (\$20-\$25M)
  - Immediately develop and I&I Strategy that includes locating I&I, implementing programs and policies for residential participation (i.e. relining, downspout disconnect, backwater valves, etc.)
- **Return on investment for Water Loss and I&I extremely high compared to upsizing and building more treatment capacity**

# Combined Sewer Separation Study

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- PUC enlisted services of Andrews Engineering in 2021 to complete a Combined Sewer Study and finalize a Pollution Prevention and Control Plan in Feb 2024
  - These reports identify immediate actions that should be budgeted
  - The AECOM Master Plan identified over \$225M of sewer separation and interceptor capacity dollars
  - A detailed 10-year plan should be developed to ensure efficient and effective roll out of these programs
- **Need to balance these dollars with the need to maintain existing assets in a SOGR and provide for growth**

# Foundational Plans

## Foundational Plans

Asset Management Plan, Rate Study, OP, WWW MP,  
DC Background Study, Greenhouse OP Policies

# Foundational Plans

- **Official Plan** update will most likely include SW Chatham Area
  - Other OP issues include Greenhouse Policy, Waterline Petition Policy
- **Municipal DC By-law** set to expire August 2027 and PUC DC-By-law expires March 2034
  - Need a DC Background Study in 2026/27 to include growth projects
    - SW Chatham, Chatham Supply/Storage Capacity, E/A for Wallaceburg/Chatham
- **Rate Study** complete – need to review in 5 yrs
- Consider a **new W/WW Master Plan** Study after Operational Studies are complete and Greenhouse Policy adopted
- Need to complete a 2025 Future LOS O. Reg. 588/17 compliant **Asset Management Plan** in coordination with Chatham Kent staff

# Strategic Business Plan

## **Overall Strategic/Business Plan**

Municipal VU Model – Customers, Processes, Technology, People & Culture, Finances/Assets, and Strategy KPIs

# Strategic Business Plan

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- PUC lacks a long-term Strategic Business Plan
  - Mandate
  - Overall PUC Goals (aligned with the Municipality)
  - Documented LOS and KPIs
  - Stakeholder Management Strategy
- Limited resources requires a prioritization process to balance all parts of the business
- Utilize Municipal VU Model or Balance Scorecard Approach

# Municipal VU Model



## Customers & Services

- Customer satisfaction & Stakeholder relationship management
- Defined Service Levels



## Operations & Processes

- Efficiency and Effectiveness
- Day to Day Operations



## Technology & Information

- Data, Information, Knowledge, Decisions
- Technology Solutions
- Document & records control



## People & Culture

- Structure, Training, Compensation
- Communication, Teamwork, engagement
- Leadership



## Finances & Assets

- Infrastructure and Assets
- Financial and Commercial Management



## Strategy & Tracking

- Mission, Vision and Priorities
- Key Performance Indicators
- Risk Management
- Governance



Systematic Approach to balancing all aspects of the Utility

**Thank You!**