



RFP 2023-16

Mapleton's Water and Wastewater Upgrades

Project Development Update

Presented By: Graham Capital

October 08th, 2024

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A photograph of a wastewater treatment plant. The foreground shows a large aeration tank with water being aerated, creating a pattern of white foam on the surface. The tank is bordered by yellow metal railings. In the background, there is a long, multi-story brick building with many windows, likely a control or administrative building. To the left, there is a line of tall, thin trees. The sky is overcast and grey.

01 Project Background

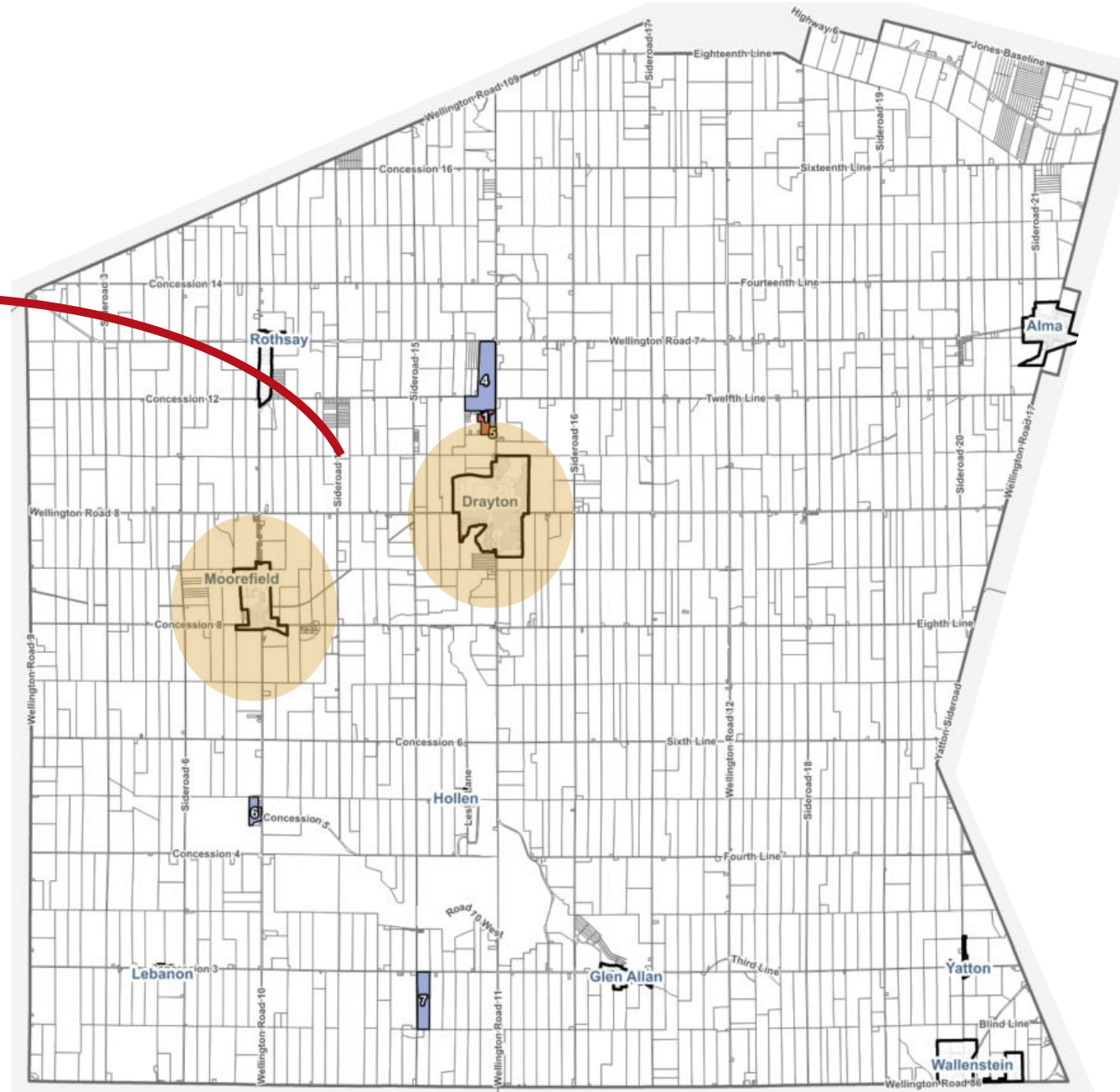
Project Background

Significant population growth forecasted








Water & wastewater upgrades needed

- Upgrades to the Mapleton Wastewater Pollution Control Plant (WPCP)
- Upgrades to Drayton and Moorefield Sewage Pumping Stations
- Improvements to W/WW distribution systems
- Construction of new W/WW pumping stations



Required Upgrades

Current Infrastructure	Upgrades
 <p>Moorfield Water System Renewal</p>	<p>Pumphouse and standpipe upgrades (Project No 22007)</p>
 <p>Moorfield Sewage Pumping Station (Wastewater)</p>	<p>Includes pump replacements and additional items (Project No 20164)</p>
 <p>Drayton Sewage Pumping Station (Wastewater)</p>	<p>Upgrades and replacements of various components (Project No 24---)</p>
 <p>Mapleton Wastewater Treatment Plant (Treats Wastewater from both Moorfield & Drayton) + Forcemain Twinning</p>	<p>Upgrade to expand capacity from 900 to 1,300m³/day (Project No 18026)</p>
 <p>Various Water and Wastewater Systems</p>	<p>Water and Sewer Distribution Extension Wellington Street South and Main Street West (Project No 22081, 22082, 22078, 22079)</p>

Development & Delivery Team



Owner and user of all utility infrastructure

- Ownership to remain 100% with Mapleton as Phases 1 & 2 are completed.



Design Lead for all proposed water and wastewater upgrades

- Hired by Mapleton as the Design Lead for previous water/wastewater projects. Working relationship to continue.
- Significant progress already put into the design of Phase 1.



Operations & Maintenance Provider for all water and wastewater infrastructure

- Hired by Mapleton as the O&M provider. O&M to remain status quo as new infrastructure upgrades get completed.



Development Lead and Financial Advisor for all proposed water and wastewater upgrades

- Hired by Mapleton to perform initial 'validation phase' to confirm overall feasibility of Phases 1 & 2.
- Further agreements to continue development and financial services for these Phases to be executed upon council approval.



General Contractor and Preconstruction Lead for all proposed water and wastewater upgrades

- Brought on through Graham Capital to lead construction estimating and scheduling for the 'validation phase'.
- Further agreements to continue preconstruction/construction services for these Phases to be executed upon council approval.

Our Process

		Phase 1: Project Validation	Phase 2: Early Project Development	Phase 3: Advanced Project Development	Phase 4: Financial Close	Phase 5: Project Delivery	Phase 6: Long-Term Management
Workstreams	Finance	Feasibility	Financial Structuring & Market Sounding	Lender Selection & Due Diligence	Financing Secured	Management of Lender Requirements Advisory Services RE: Rate Setting & MSC Financials Construction Invoice Approvals	
	Technical (D&C)	30% Design, Class D Cost Estimate, High-Level CPM Schedule	60% - 90% Design, Class C – B Cost Estimate Detailed CPM Schedule		90% - IFC Design, Fixed Price Fixed Schedule	IFC Drawings & Spec, Construction	Warranty Phase Obligations
	Legal	Structure Validation	Draft Agreements	Finalize Agreements, Establish MSC Establish PCo	Sign Agreements	Fulfill Agreements (Construction & MFSA)	Fulfill Agreements (MFSA)
Preliminary Timeline		3 Months	6-7 Months			~ 18 – 21 Months	~ 40 Years

We are here

Project Delivery Strategy – Partnership Approach

Collaboration Between All Parties

Key Objectives of the Partnership

- 1) Develop, finance and build the required water/wastewater infrastructure
- 2) Minimize impacts to ratepayers to the greatest extent possible through efficient financing
- 3) Involve Mapleton in Project related activities/decision making
- 4) Collaborate with CIMA & OCWA through design, construction, and the transition to operations

Partnership to Develop/Finance/Build



Mapleton's Existing Designer and Operator



Current Status

Technical

- 30% design package for Phase 1 is complete
- Estimate and schedule developed based on 30% design
- Preliminary estimate and schedule for Phase 2 based on Mapleton's 10-year capital plan and assumptions around contingencies

Financial

- Initial financial model complete based on current Phase 1 and 2 construction cost estimates
- Financial structure has been validated

Legal

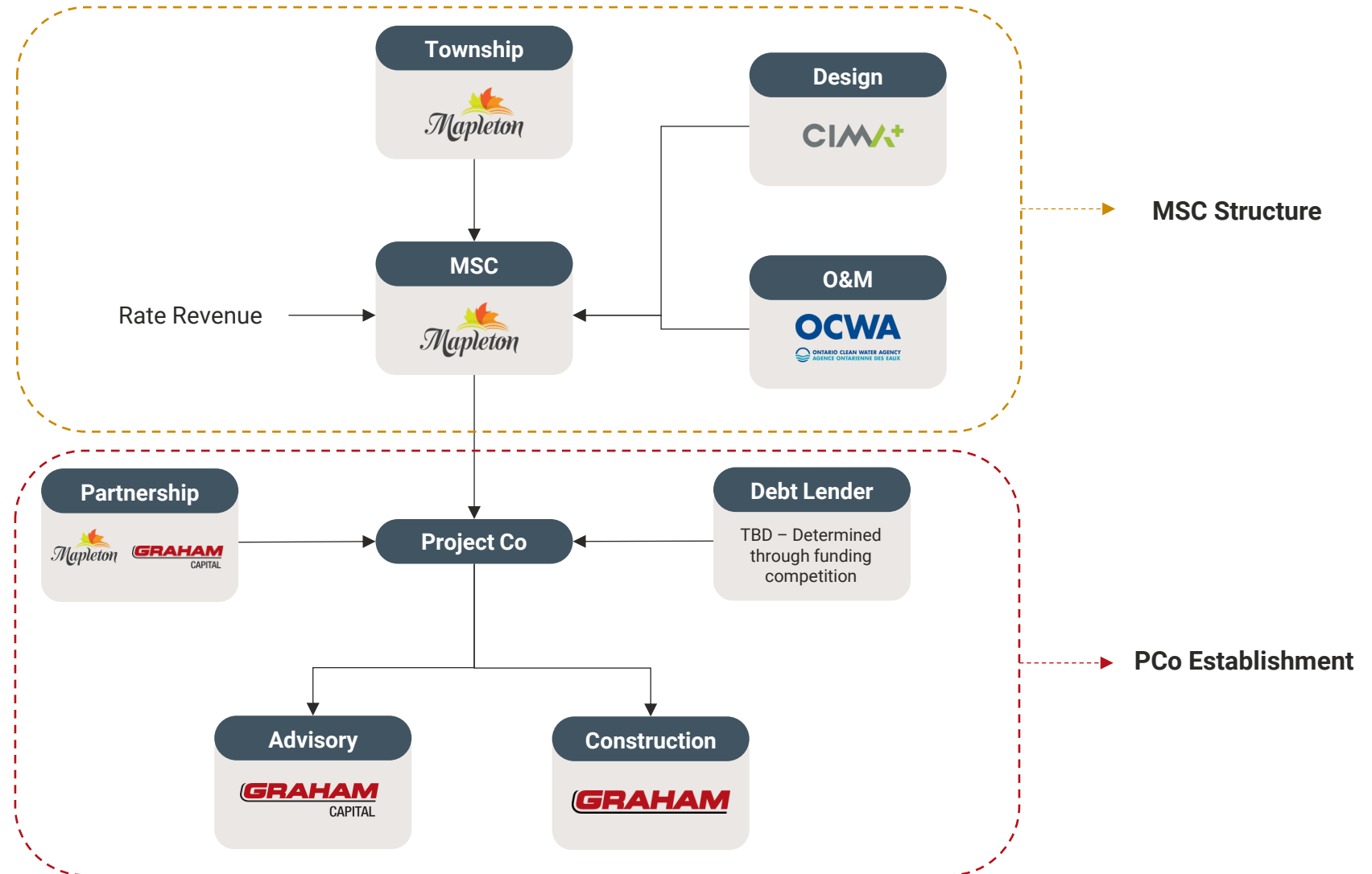
- Legal structure has been validated
- Early Works Agreement has been drafted and reviewed by Mapleton
- MSC establishment process has been discussed with Mapleton

This concludes our 'Project Validation' phase which has confirmed that Mapleton's proposed projects are financially feasible under our proposed delivery structure



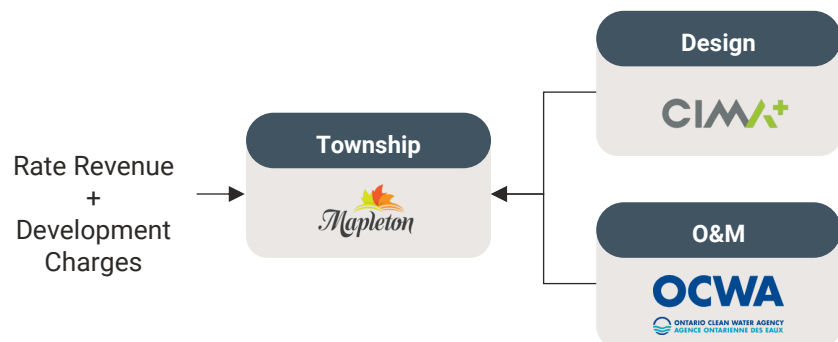
02 Delivery Structure

Delivery Structure - Overview



Establish a Municipal Services Corporation (MSC)

Current Structure:



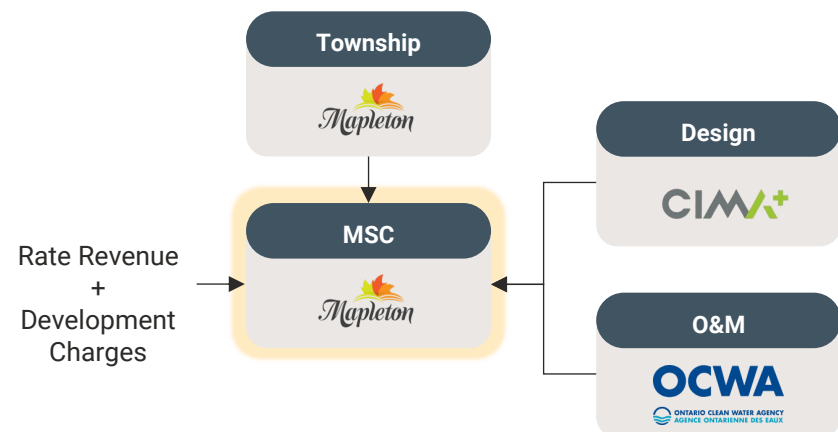
Key Functions:

- Legal entity established as a carve-out of existing water/wastewater utility department
- “Ring fence” assets, liabilities and revenues associated with the utility at the MSC (debt associated with the utility MSC does not consolidate to the Township’s balance sheet)
- Rate setting recommendations by MSC, final approval from Township

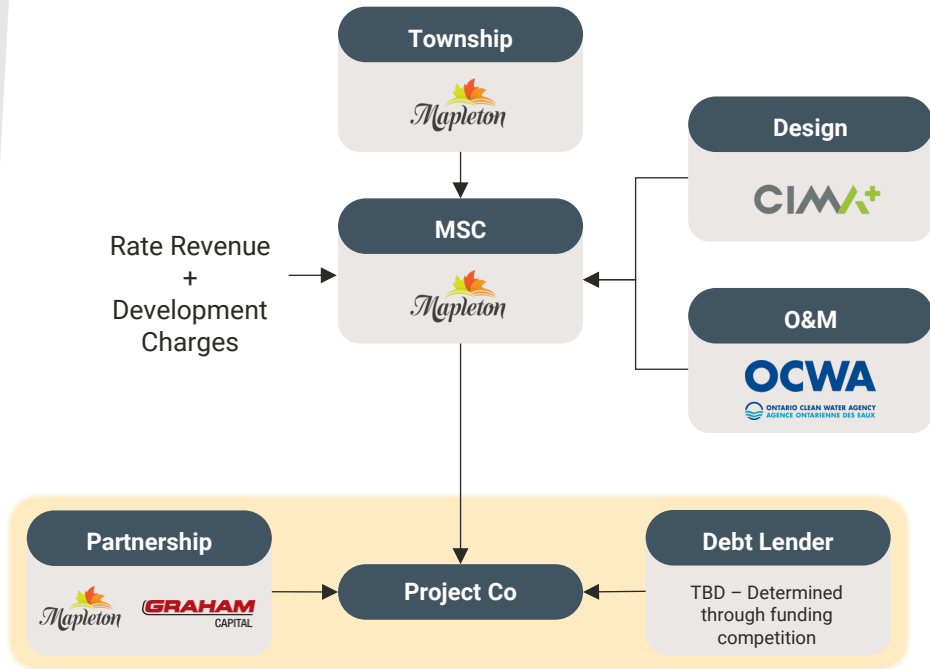
Mechanics:

- 100% owned by Mapleton
- Operates under a Franchise Agreement and Operating Lease with the Township
- Billing and collection activities will now occur at the MSC
- Design and O&M contracts for the utility infrastructure will move to the MSC
- Must operate as a sustainable “utilities pay for utilities” structure
- Surplus revenues can be paid as dividends from the MSC to the Township
- Governed by Mapleton with the option to include CIMA, OCWA, and/or Graham Capital for advisory services

MSC Establishment:



Establish a Project Delivery Vehicle (Project Co)



Key Functions:

- Established to deliver a defined project scope (i.e. Phase 1 projects)
- Project level debt will be brought into Project Co

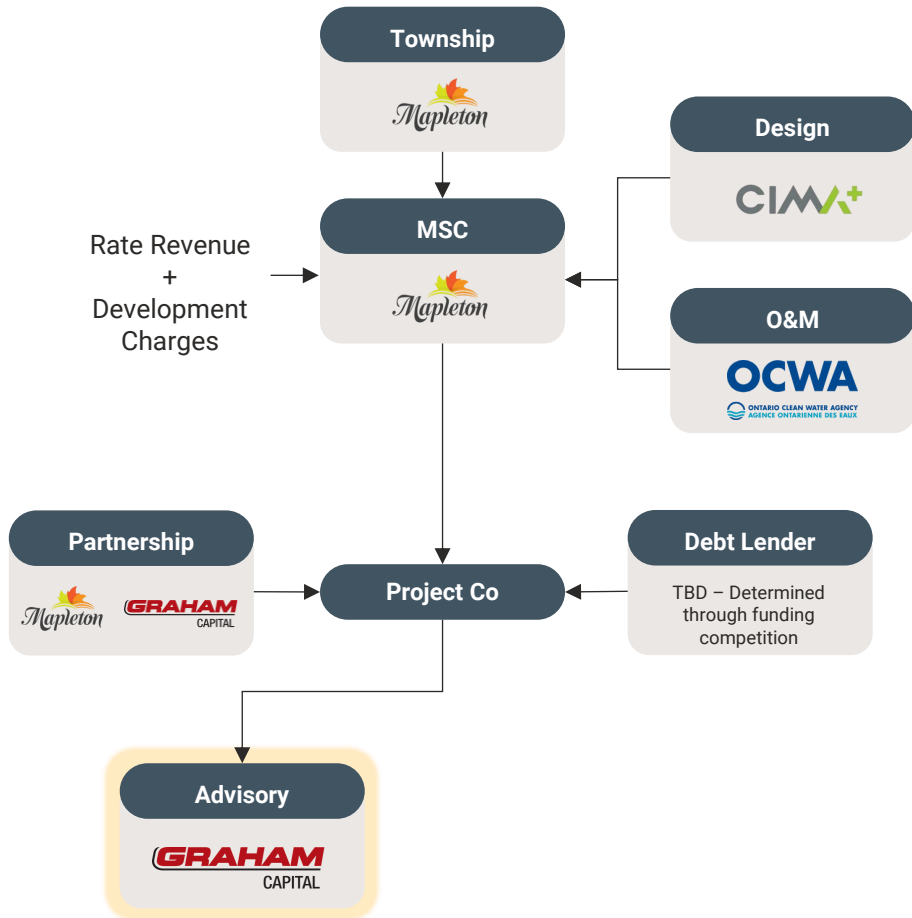
Agreements:

- 50/50 Partnership between Mapleton's MSC and Graham Capital for joint governance and decision making

Financing:

- Mapleton's grant funding for the utility projects will be used facilitate payments to Project Co.
- Affordable project level debt will be brought into Project Co
- Project Co surpluses will flow to the MSC
- Contingency funds will be held at Project Co to address any design changes or unforeseen conditions.

Advisory by Graham Capital



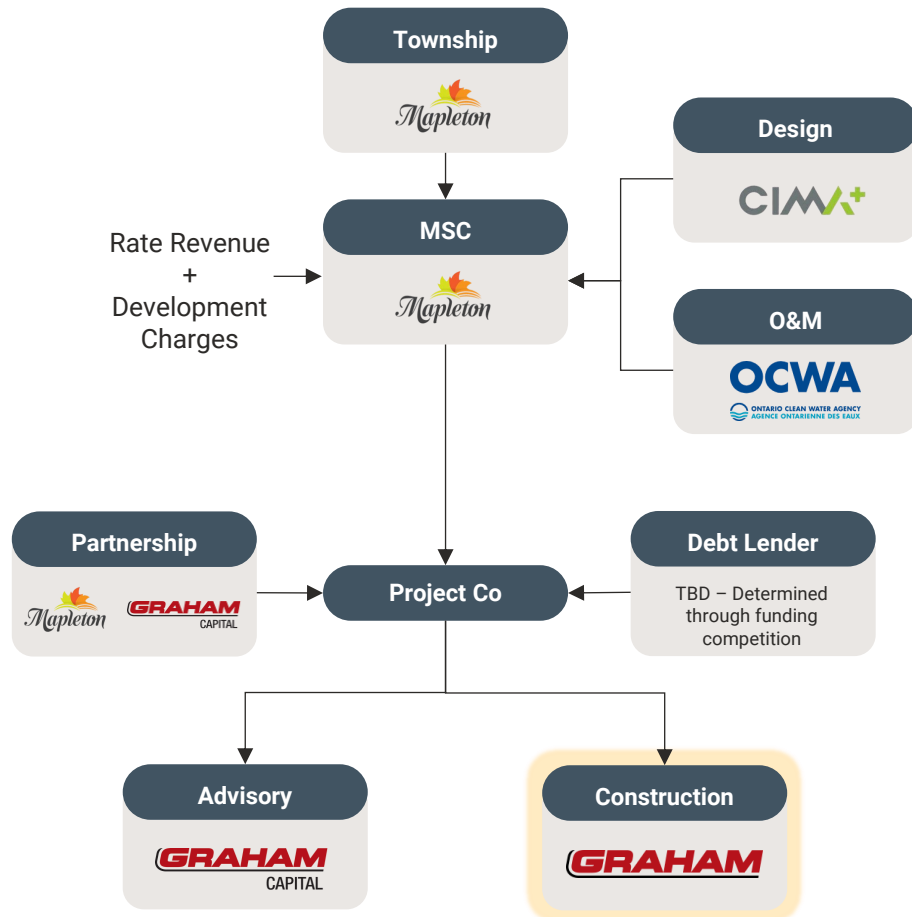
Agreements:

- Before partnership is established, Graham Capital will work under an Early Works Agreement with the Township
- Once Project Co is established, Graham Capital will work under a Management and Financial Advisory Services contract with Project Co

Graham Capitals Responsibilities:

- Overall responsibility for developing the legal and financial structure
- Financial advisory and modelling services to support project development
- Negotiate with lenders to secure required debt financing
- Maintain lender relationships through course of partnership
- Long term governance and advisory support role once construction is complete

Precon & Construction by Graham Infrastructure



Agreements:

- Before partnership is established, Graham Infrastructure will work under an Early Works Agreement with the Township for preconstruction activities
- Once Project Co is established, Graham Infrastructure will work under a lump sum, fixed price construction contract (CCDC2) with Project Co

Graham Infrastructure's Responsibilities:

- Work with CIMA through value engineering and constructability reviews to complete design, identify/mitigate construction/design risk
- Work with OCWA to ensure long-term efficiencies are embedded into the design
- Provide transparent, open book construction price updates at various design milestones until design is complete and pricing can be fixed
- Involve key suppliers/subtrades for real time, accurate pricing
- Construct proposed infrastructure
- Work with OCWA through commissioning and turnover of the new infrastructure

Delivery Structure – Core Benefits

Benefits	Commentary
Enables Effective Project Delivery	<ul style="list-style-type: none"> • Secures private sector partners with breadth of expertise to deliver necessary work. • Project benefits from Early Contractor Involvement, ensuring effective risk management and cost optimization.
Secure Alternative Financing	<ul style="list-style-type: none"> • Debt secured from private sector lender at highly competitive rates. • The amount of private equity required is minimized and has capped returns. • Rate pressures are alleviated by removing private sector equity dividends as a profit motivator
Off Balance Sheet Debt Treatment	<ul style="list-style-type: none"> • The Partnership is intentionally structured such that project-level debt is consolidated off the Township’s balance sheet. • This accounting treatment is achieved without the Township ceding control of their assets to the private sector.
Retention of Control by Community	<ul style="list-style-type: none"> • Mapleton retains joint control of the Project, and full control over the asset. • Maximizes the ability of the municipality to influence rates over the long-term. • Results in optimum level of service for municipal consumers, and retention of economic benefits within the community.
Facilitates Timely Delivery	<ul style="list-style-type: none"> • Project financing will be brought in to ensure projects can be completed, rather than waiting for reserves to build up over time

A photograph of a wastewater treatment plant. In the foreground, there are several large aeration tanks with yellow metal railings. The water in the tanks is dark and has a textured, bubbly surface. In the background, there is a long, multi-story brick building with many windows. To the left of the building, there is a line of tall, thin trees. The sky is overcast and grey. The overall scene is industrial and somewhat somber due to the overcast lighting.

03 Cost Estimates & Utility Rates

Open Book Cost Estimation

Current Status	Progression to Fixed Price
Break Down by Division	
Divisional breakdown and further breakdowns within divisions are provided for transparency	Continued breakdown to ensure continued transparency
Assumptions	
Since design is only 30% complete, all assumptions are tracked and discussed to ensure alignment with CIMA's design intent	Aim to reduce assumptions list as design progresses and assumptions are confirmed
Opportunities	
Cost saving opportunities are tracked, but actual savings are not yet accounted for given the early stage of the design	Aim to realize opportunities through design and reduce cost
Risks	
Risks are tracked and accounted for through contingency	Aim to address and mitigate risks and account for any remaining risk through contingency

Estimate Summary

Estimate	Construction Cost (Incl. 30% Contingency)	Scope Summary
Estimate 1 – Moorfield Pumphouse and Standpipe Upgrades	\$6,327,154	Estimate includes construction of an emergency overflow tank, new trunk sewer along Mill St including connections at Queen St and King St, and decommissioning of the existing Drayton SPS. A detailed breakdown is provided in Appendix A.
Estimate 2 – Drayton Sewage Pumping Station Upgrades	\$12,919,277	Estimate includes supply and install of a new standpipe and associated piping, new pumphouse extension including structural, architectural, building mechanical and electrical and facility upgrades including HVAC system, high lift pumps, and process electrical/instrumentation. A detailed breakdown is provided in Appendix A.
Estimate 3 – WWTP Upgrade to 1,300m ³ /day	\$20,521,145	Estimate includes the capacity expansion of the Mapleton WWTP from 900 m ³ /day to 1,300 m ³ /day and the twinning of the forcemain between the new Drayton SPS and the inlet chamber. The scope of work for the Mapleton WWTP capacity expansion includes the construction of a new MBBR system with ancillary equipment to provide nitrification, new control building with aeration blowers, new standby power generator and increase electrical service, and electrical upgrades.
Various Water and Wastewater Systems Upgrades	\$3,560,000	Capital projects scheduled between 2025 – 2027. <ul style="list-style-type: none"> • Water and Sewer Extension Wellington Street South • Mapleton Water Pollution Control Plant Cell 1 Cleanout • Moorefield Wastewater Pumping Station Upgrades • Water and Sewer Extension Main Street West near Industrial Drive
Totals	\$39,767,576 + 3,560,000 = \$43,327,576	Note: If left unused, all contingency flows back to Mapleton’s MSC

Our Financing Approach

We are committed to supporting Mapleton in developing the necessary utility infrastructure with cost-efficient financing structure that minimizes the impact on ratepayers.



Efficient Capital Structure

- Maximize use of investment grade debt to minimize equity requirement
- Graham will invest minimal equity and will earn a capped return on its equity.



Reserve Fund Build-up

- Rate increases will start in 2025 to build an operating surplus.
- The existing balance in the Environmental Reserve Fund will be transferred to the MSC at FC. This will be used to cover capital costs once construction is completed, reducing the need for larger rate increases.
- All MSC reserves will be placed in interest-bearing accounts, with the interest used to offset rate increases.



Grant Utilization

- Develop a structure that allows for the utilization of grant funds to directly pay for infrastructure cost.
- This mechanism allows grants to materially reduce the capital charge payable post substantial completion.



Development Charges Extend Rate Implementation Period

- Development charges (DC) will be collected as new dwellings and commercial spaces are developed, per the DC study.
- These charges will increase the MSC reserve balance, which will be used to pay the Project's capital costs.
- By leveraging development charges, the township can phase in rate increases over 12 years, instead of 5 years if no growth is assumed.

Financial Analysis Assumptions

Water and Wastewater Operating Assumptions

Category	Value (\$ Millions)	Description
Utility System Assumptions		
Direct Billings - Water (Budget 2025)	\$934,650	From Operating Budget 2024
Direct Billings – Sewer (Budget 2025)	\$952,567	From Operating Budget 2024
Operating Costs– Water (Budget 2025)	\$663,236	From Operating Budget 2024
Operating Costs– Sewer (Budget 2025)	\$573,607	From Operating Budget 2024
Water Operating Surplus (Budget 2025)	\$300,040	Represents Operating Surplus transferred to reserve funds. This will be used to pay for project’s capital costs and reduce rate increases
Operating Cost Inflation	2.00%	Estimated increase in operating cost for water and wastewater systems due to inflation
Wastewater Operating Surplus (Budget 2025)	\$388,100	Represents Operating Surplus transferred to reserve funds. This will be used to pay for project’s capital costs and reduce rate increases
Environmental Reserve Fund Balance (Jan 2024)	\$2.74 Million	Provided by Mapleton
Capital Maintenance and Renewal Costs	\$1.595 Million	Provided by Mapleton
Total New Dwellings	1,446	2024 – 2051 Growth as Per the DC Study
Total Growth in Commercial Space	Nil	No revenue growth from commercial space is considered however development charges are included
Water Monthly Base Charge (2024)	\$48.86	Schedule K Water and Wastewater Bylaw
Sewer Monthly Base Charge (2024)	\$48.86	Schedule K Water and Wastewater Bylaw
Development Charge Single (100%)	\$18,124	100% costs From DC Study - DC Charges will be phased in over 5 years
Development Charge Rows & other Multiples	\$12,793	Same as above
Development Charge Apartments	\$9,062	Same as above
Non-Residential Development Charge \$ Per Sqm	\$53.31	Same as above

Financial Analysis Assumptions

Construction and Financing Assumptions

Category	Value	Description
Construction and SPV Cost Assumptions		
Construction Costs	\$39.76 million	Includes hard construction costs for Drayton, Moorefield and WWTP Phase 1 Upgrade
Cash Allowance Costs	\$3.56 million	Capital costs for funding smaller misc. projects in Mapleton's capital budget
Construction Duration	24 Months	
Development Costs – SPV 1	\$1.6 million	Estimated one-time development costs payable at SPV 1 financial close, inclusive of all development, financial advisory, and third-party legal, technical, and insurance advisory costs.
Development Costs – SPV 2	\$150,000	One-time development costs to cover legal and advisory expenses related to the set-up of SPV 2. If grant amounts are fully known ahead of Phase 1 FC, a second SPV will not be required.
SPV Management Costs (Indexed)	\$280,000/\$110,000	Estimated annual financial and management services costs to manage obligations of Special Purpose Vehicle during the Phase 1 construction
Grant Funding Assumptions		
Drayton	\$2,063,032	Secured Grant Funding from DMAF scheme. Design costs of \$672k are assumed to be paid from this
Moorefield	\$3,658,874	Secured Grant Funding from ICIP scheme. Design costs of \$838k are assumed to be paid from this
WWTP-Phase 1	\$7,000,000	Base case assumption based on the anticipated grant funding for Phase 1 WWTP upgrade
Financing Assumptions		
ST Debt Interest Rate	5.05%	Interest Rate for short term bank facility – Includes a 50bps buffer. If grant amounts are fully known ahead of Phase 1 FC, a second SPV will not be required and thus only the LT rate below will be applicable.
LT Debt Interest Rate	5.36%	Benchmark rate used in this calculation is as of Sep 2024.
Minimum DSCR	1.05x	Minimum required Debt Service Coverage Ratio used for debt sizing
Gearing	95%	
Debt Term SPV 1	2 Years	Construction phase financing
Debt Term SPV 2	40 Years	40-years from Phase 2 financial close

Financial Analysis Results

		Growth Case	
#	Scenario Description	Annual Rate Increases (12yrs) <i>(New Infrastructure + Inflation)</i>	Annual Capital Charge (\$) <i>(New Infrastructure)</i>
1	Base Case	3.00%	\$2.7 million
2	No Additional Grant Case	5.50%	\$3.2 million

Scenario Descriptions

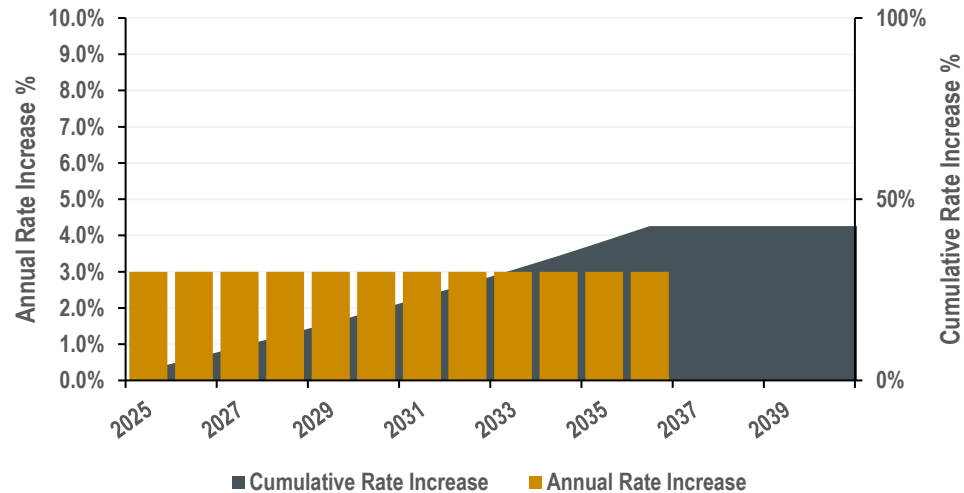
- **Base Case** – This scenario assumes additional grant funding of \$7 million for WWTP Phase 1 Upgrade in addition to secured grant funds for Drayton and Moorefield Projects.
- **No Additional Grant Case**– Only Secured Grant funds for Drayton and Moorefield are considered from the DMAF and ICIP Green stream and no additional grant funding is assumed. All capital cost and financing assumptions are the same as that of the base case.

Notes

1. Capital Payment represents a fixed payment made by MSC to Project Co to service the financial obligations of the project i.e. debt service and administrative costs.
2. Rates are increased such that the MSC would be able to fulfil the capital payment obligations and fund capital maintenance and renewal expenditure as outlined in the capital budget. Rate increase also accounts for a 2% annual inflationary increase in operating costs.
3. Development charges pertaining to new dwellings and growth in commercial space collected over the 12-year rate increase period are used to pay for the project’s debt service and reduce the burden on ratepayers.
4. Rate increases assume that the current balance of the Environmental Reserve Fund and operating surplus from both existing and new homes will be utilized to pay the project’s capital cost to minimize the required rate increases.

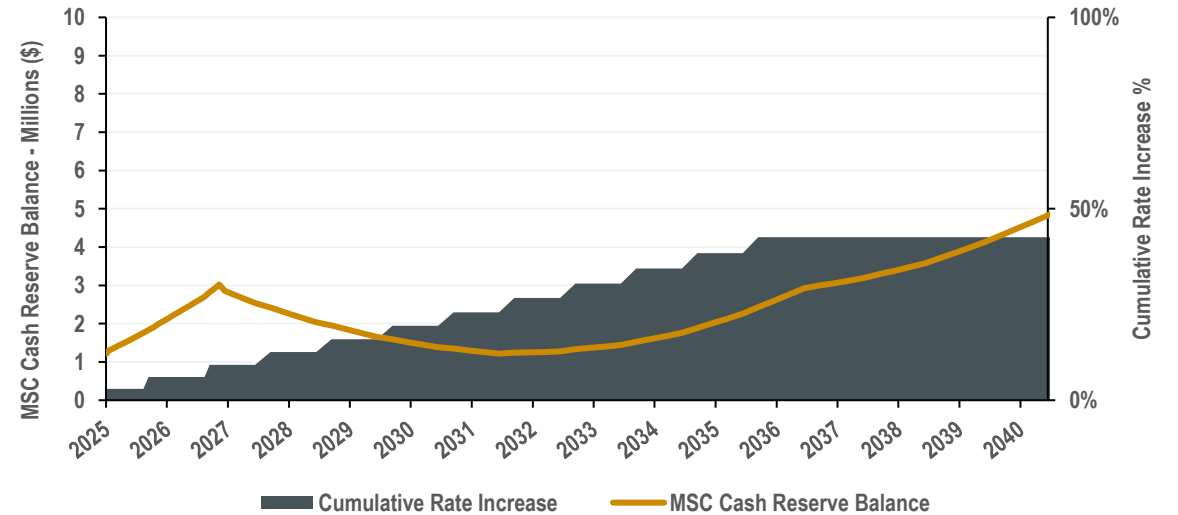
Rate Increase Charts

Rate Increase Implementation – Base Case



- In the Base Case, steady annual rate increases of 3% are needed for the next 12 years. Rate increases can be reviewed yearly based on ratepayer growth and development charges collected.
- These increases are needed to cover the annual capital payments (financing costs) of \$2.7 million spread over 40 years. The rate increases shown here represent the incremental rate increase required to service this Project’s capital cost as well as for increases in operating expenses due to inflation.

Rate Increase and MSC Cash Reserve Balance – Base Case



- As rate increases commence in 2025, additional surplus from operations increases the MSC reserve balance which is then drawn post-substantial completion to cover the project's capital charge.
- However, once the implementation of rate increases is completed, the reserve grows gradually over the term due to the collection of development charges from new dwellings and the resulting increase in revenue due to the expansion of the ratepayer base.
- At the end of the rate implementation period in 2035, the MSC has a reserve balance of \$2.3 million.



04 Summary & Next Steps

Summary

1. Bundling priority infrastructure projects for Mapleton in Phase 1 (2025-2027).
2. Partner with Mapleton using MSC/GBE structure for off-balance sheet debt.
3. Preliminary analysis confirms feasibility:
 1. Capital Cost: $\$39,767,576 + 3,560,000 = \$43,327,576$
 2. Rate Increase: 3% annually over 12 years.

4. Timeline

We are here

	Phase 1: Project Validation	Phase 2: Early Project Development	Phase 3: Advanced Project Development	Phase 4: Financial Close	Phase 5: Project Delivery	Phase 6: Long-Term Management
Description	Evaluate feasibility for Graham and Mapleton before major time and capital investment.	Conduct all activities to allow for a successful Financial Close while minimizing construction risk and prepare for construction.			Deliver the project on time and within budget.	Transition to OCWA, work through warranty period, continue to support Mapleton as required.
Milestones	<ul style="list-style-type: none"> End of Validation: Sept 24, 2024 	<ul style="list-style-type: none"> End of Phase 2: Dec 2024 	<ul style="list-style-type: none"> Execute Statutory Process for MSC: Jan – Mar 2025 End of Phase 3: Mar 2025 	<ul style="list-style-type: none"> Fixed Construction Pricing, Establish MSC, Financial Close: April 2025 	<ul style="list-style-type: none"> Phase 1 Construction: 2025-2027 	<ul style="list-style-type: none"> End of Concession: Oct 2067 (~40 years)

Next Steps

1. Execute Early Works Agreement (EWA)

- a. Begin engagement of external legal and financial counsel

2. Continue Design Progression

- a. Collaborate with CIMA+ and OCWA on the design and refine cost and schedule estimates
- b. Determine the optimal structure for project financing and rate adjustments

3. Provide an update before establishing the MSC

- a. Prepare drafts of documents to establish the MSC such as Operating Lease, Franchise Agreement & Business Plan.
- b. Execute statutory process to establish MSC
 - i. Preliminary timeline January 2025 – March 2025

Next Update to Council: December 2024

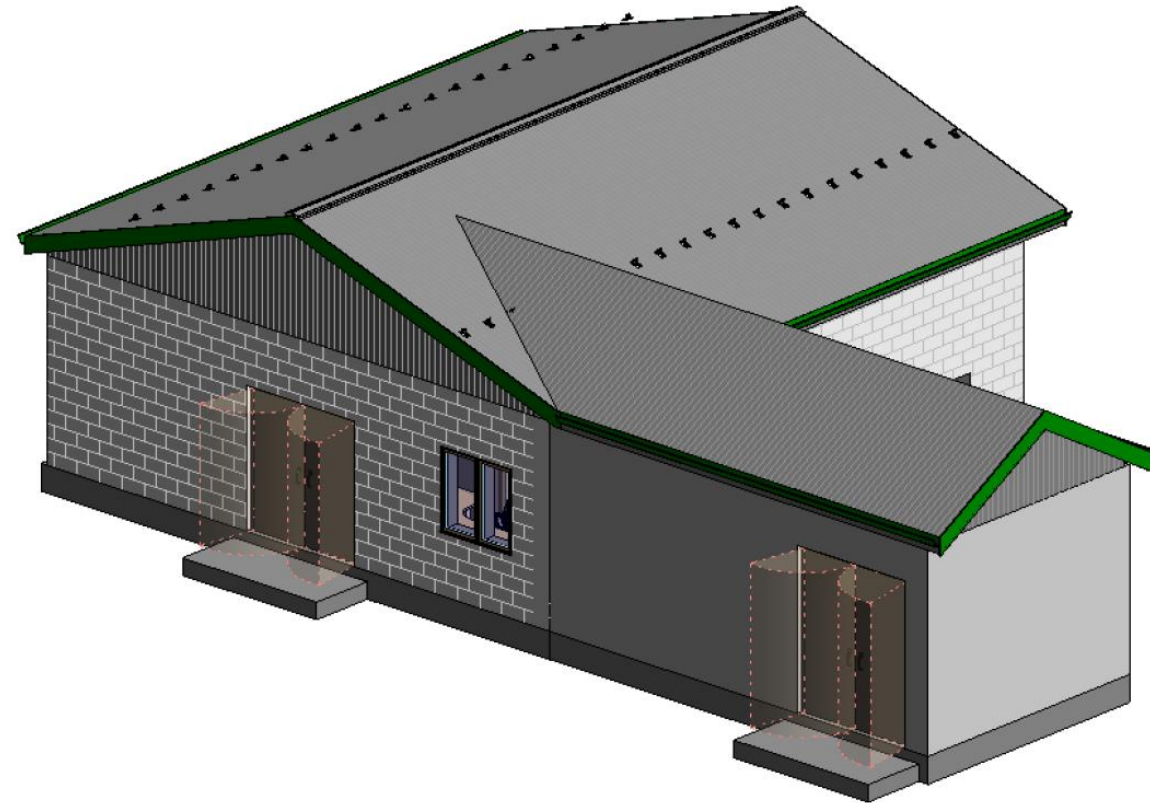
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Appendix A – Cost Estimate Breakdowns

Estimate 1: Moorfield Pumphouse

Construction Costs:

Description	Cost
Division 01: General Requirements	\$ 1,513,281.55
Division 02: Site Works	\$ 467,650.10
Division 03: Concrete Works	\$ 101,936.58
Division 04: Masonry	\$ 120,658.14
Division 05: Metals	\$ 29,287.41
Division 06: Woods	\$ 117,193.56
Division 07: Thermal	\$ 90,000.00
Division 08: Doors	\$ 40,280.09
Division 09: Finishes	\$ 59,050.00
Division 10: Specialties	\$ 3,274.82
Division 11: Equipment	\$ 826,799.93
Division 13: Instrumentation	\$ 325,000.00
Division 15: Mechanical	\$ 74,176.64
Division 16: Electrical	\$ 655,994.24
Subtotal Costs	\$ 4,424,583.06
Contractor's OH & Fee - 10%	\$ 442,458.31
Estimating Contingency - 20%	\$ 973,408.27
Construction Contingency - 10%	\$ 486,704.14
Total Preliminary Cost Estimate	\$ 6,327,153.78



Estimate 2: Drayton SPS

Construction Costs:

Description	Cost
Division 01: General Requirements	\$ 1,860,134.88
Division 02: Site Works	\$ 3,338,670.57
Division 03: Concrete Works	\$ 1,355,965.25
Division 04: Masonry	\$ 160,212.79
Division 05: Metals	\$ 72,007.44
Division 06: Woods	\$ 133,621.19
Division 07: Thermal	\$ 125,175.00
Division 08: Doors	\$ 25,310.06
Division 09: Finishes	\$ 108,494.00
Division 10: Specialties	\$ 12,280.59
Division 11: Equipment	\$ 876,158.33
Division 13: Instrumentation	\$ 215,000.00
Division 15: Mechanical	\$ 108,000.00
Division 16: Electrical	\$ 643,429.43
Subtotal Costs	\$ 9,034,459.53
Contractor's OH & Fee - 10%	\$ 903,445.95
Estimating Contingency - 20%	\$ 1,987,581.10
Construction Contingency - 10%	\$ 993,790.55
Total Preliminary Cost Estimate	\$ 12,919,277.13



Estimate 3: WWTP Phase 1

Construction Costs:

Description	Graham
Division 01: General Requirements	\$ 3,353,005.73
Division 02: Site Works	\$ 2,810,500.00
Division 03: Concrete Works	\$ 1,542,210.08
Division 04: Masonry	\$ 165,001.24
Division 05: Metals	\$ 85,000.00
Division 06: Woods	\$ 176,094.82
Division 07: Thermal	\$ 247,180.00
Division 08: Doors	\$ 24,560.06
Division 09: Finishes	\$ 118,590.00
Division 11: Equipment	\$ 1,818,794.01
Division 13: Instrumentation	\$ 185,000.00
Division 15: Mechanical	\$ 87,014.96
Division 16: Electrical	\$ 775,000.00
WWTP Subtotal Costs	\$ 11,387,950.90
Division 01: General Requirements	\$ -
Division 02: Site Works	\$ 2,962,500.00
Forcemain Subtotal Costs	\$ 2,962,500.00
Contractor's OH & Fee - 10%	\$ 1,138,795.09
Contractor's OH & Fee - 10%	\$ 296,250.00
Estimating Contingency - 20%	\$ 2,505,349.20
Estimating Contingency - 20%	\$ 651,750.00
Construction Contingency - 10%	\$ 1,252,674.60
Construction Contingency - 10%	\$ 325,875.00
Total Preliminary Cost Estimate	\$ 20,521,144.79

