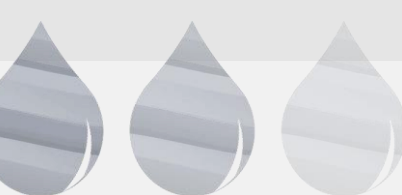


# South Niagara Falls Wastewater Solutions Schedule C Class Environmental Assessment

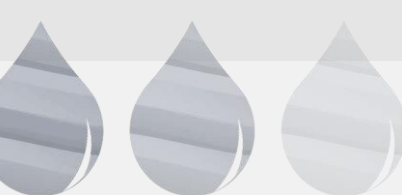
Wastewater Program and Cost Estimate Update

Thursday, September 24, 2020

Zoom Meeting



1. Project Background and Validation
  1. 2017 Master Servicing Plan (MSP) Overview and Recommendations
  2. Projected Growth
  3. SNF WW Solutions Class Environmental Assessment
2. Cost Estimate
  1. Principles, Accuracy and Approach
  2. Class D Cost Estimate
3. Financial Review
  1. Budget Implications
  2. Operating Savings & Impact
4. Next Steps
5. Q & A



- 2041 growth projections were developed through the Municipal Comprehensive Review (MCR) process, approved by Council and utilized in the Master Servicing Plan (MSP) Update
- The MSP developed Region-wide servicing strategies and established the Niagara Falls strategy including the new WWTP
- Niagara Falls Strategy:
  - Go North vs New Plant
  - Rationale for selection (financial, technical feasibility of expanding existing system, development pressures/growth)
  - Foundation moving forward into Class EA
- Identified need for new South Niagara Falls Wastewater Treatment Plant (SNF WWTP)
- Recommended moving forward to Schedule C Class EA

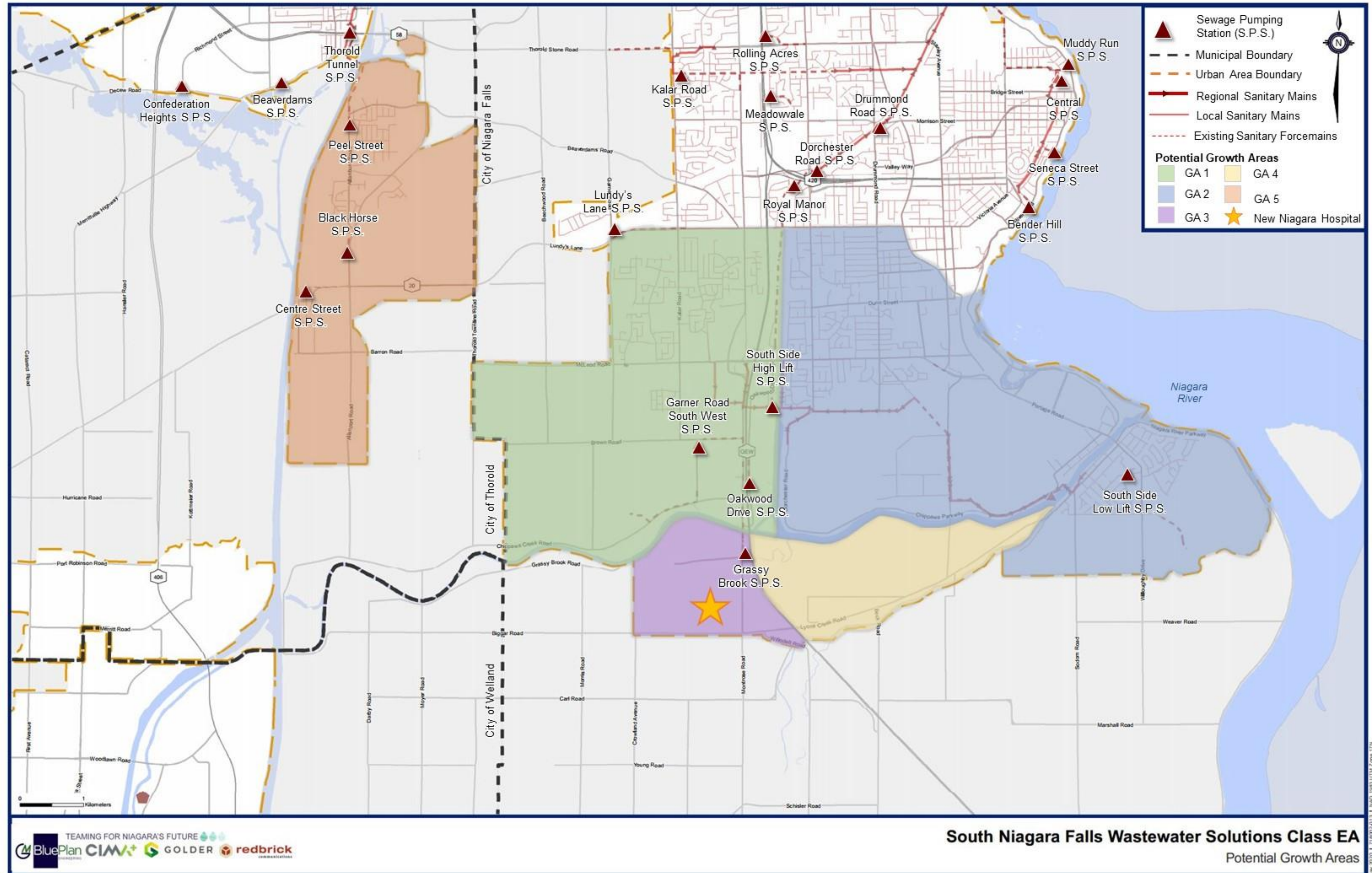


- MSP undertook a cost benefit evaluation of the Go North vs New Plant options
- Class EA has validated the Cost Benefit Analysis
- New Plant was selected as preferred
  - Higher capital costs and higher lifecycle costs
  - Better financial risk management (capacity phasing, greenfield construction)
  - Greater flexibility and ability to service long term growth
  - More efficient and cost effective post period capacity
  - Avoids difficult and costly construction related to existing infrastructure within urban developed areas as well as site constraints at the existing Stanley Ave WWTP
- SNF strategy provides broader benefit to support servicing and mitigating system issues in Niagara Falls including North NF and Chippawa, Thorold, NOTL, and St. Catharines





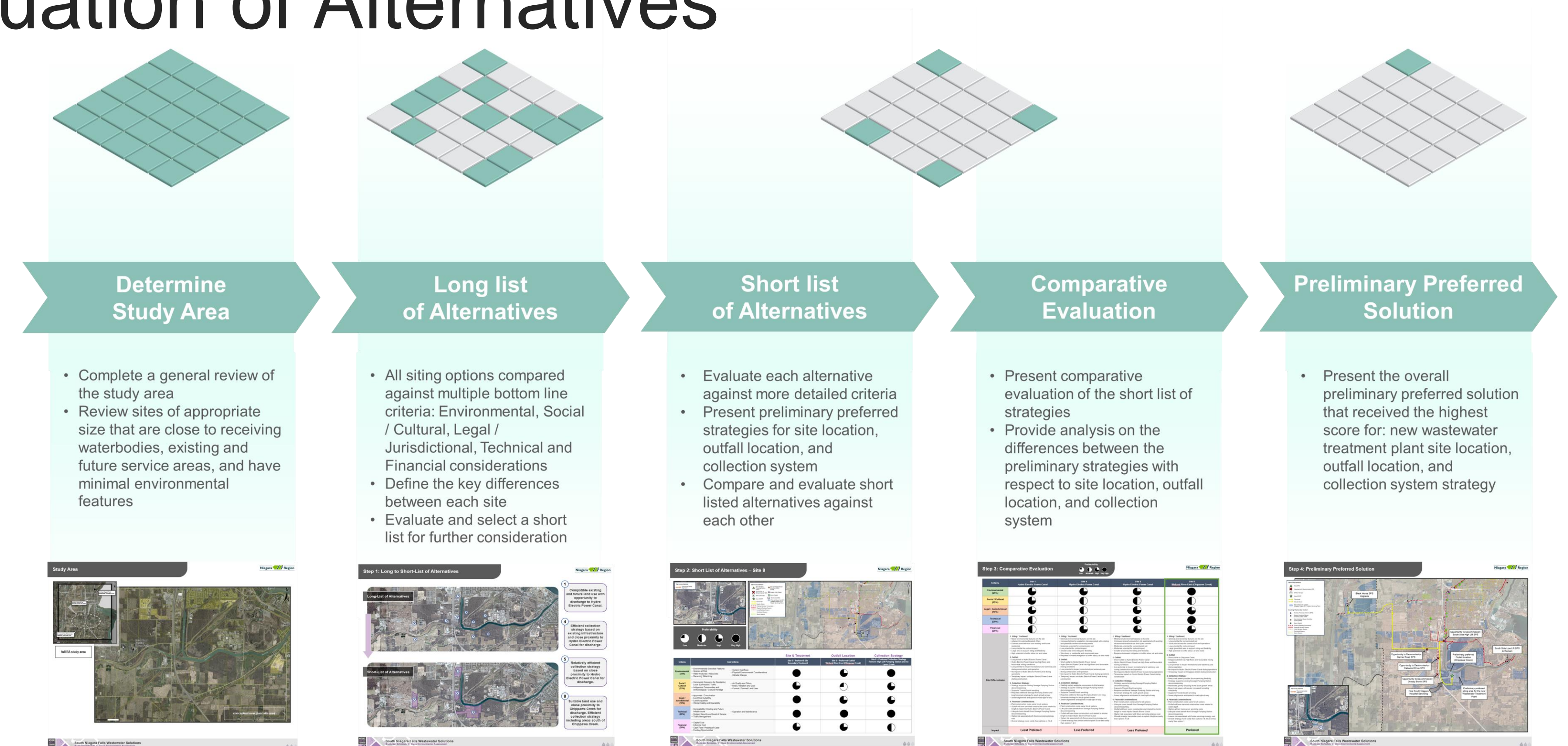
# Projected Growth





- Pre-Consultation and Stakeholder Engagement
- 3 Public Information Centres (PICs) to date, 1 more anticipated in late fall 2020 or early 2021
- Extensive Development and Evaluation of Alternatives

- Treatment Plant Site
- Collection System Strategy
- Outfall Location



- Presented Preliminary Preferred Solution to the Public on March 11, 2020
- Supported Preferred Solution – Moving forward with Design Concepts





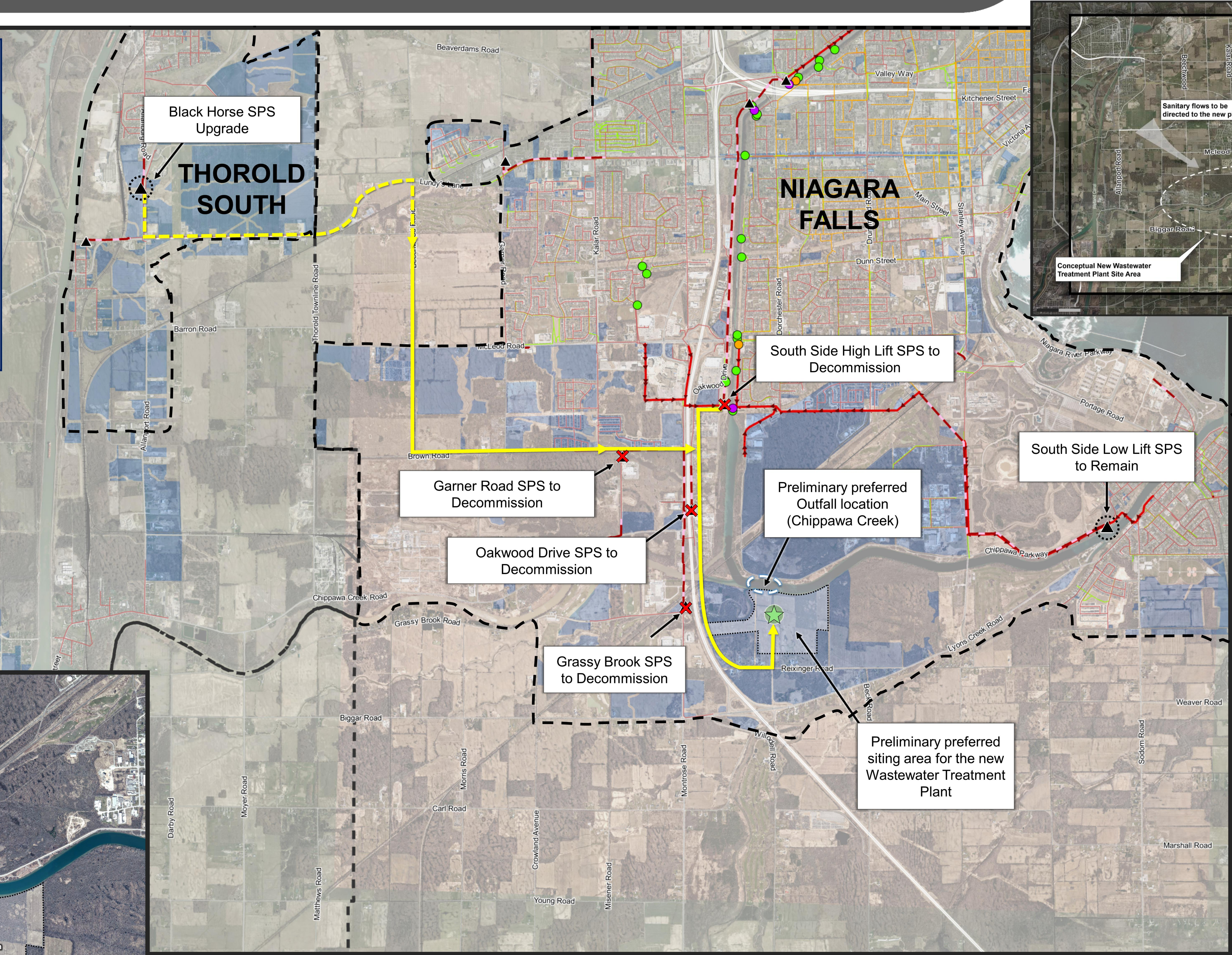
# SNFWWS Class EA Preferred Solution

**Servicing Options**

- New SPS
- Opportunity to Decommission SPS
- SPS to Remain
- New WWTP
- Forcemain
- Gravity Sewer
- Planned Growth to 2041 (Niagara Region 2017 Master Servicing Plan)

**Existing Wastewater System**

- Sanitary Pumping Stations (SPS)
- Region Combined Sewer Overflow (CSO) Outfall
- City Combined Sewer Overflow (CSO) Outfall
- Storm Outfall
- Existing Sanitary Force mains
- Regional Sanitary Sewers
- Local Sanitary Sewers
- Combined Sewers
- Storm Sewers





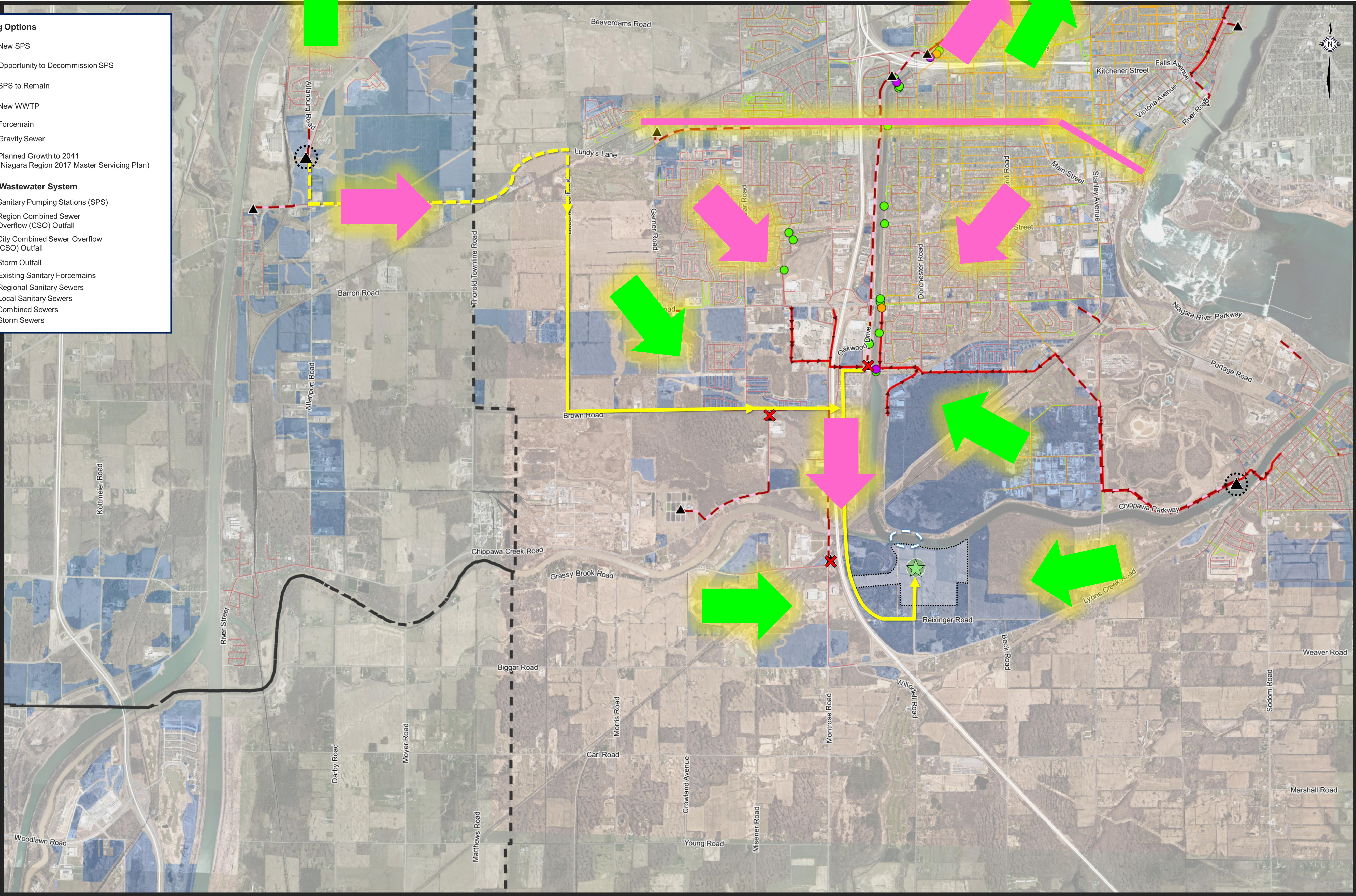
# Servicing Strategy Map

**Servicing Options**

- New SPS
- Opportunity to Decommission SPS
- SPS to Remain
- New WWTP
- Forcemain
- Gravity Sewer
- Planned Growth to 2041  
(Niagara Region 2017 Master Servicing Plan)

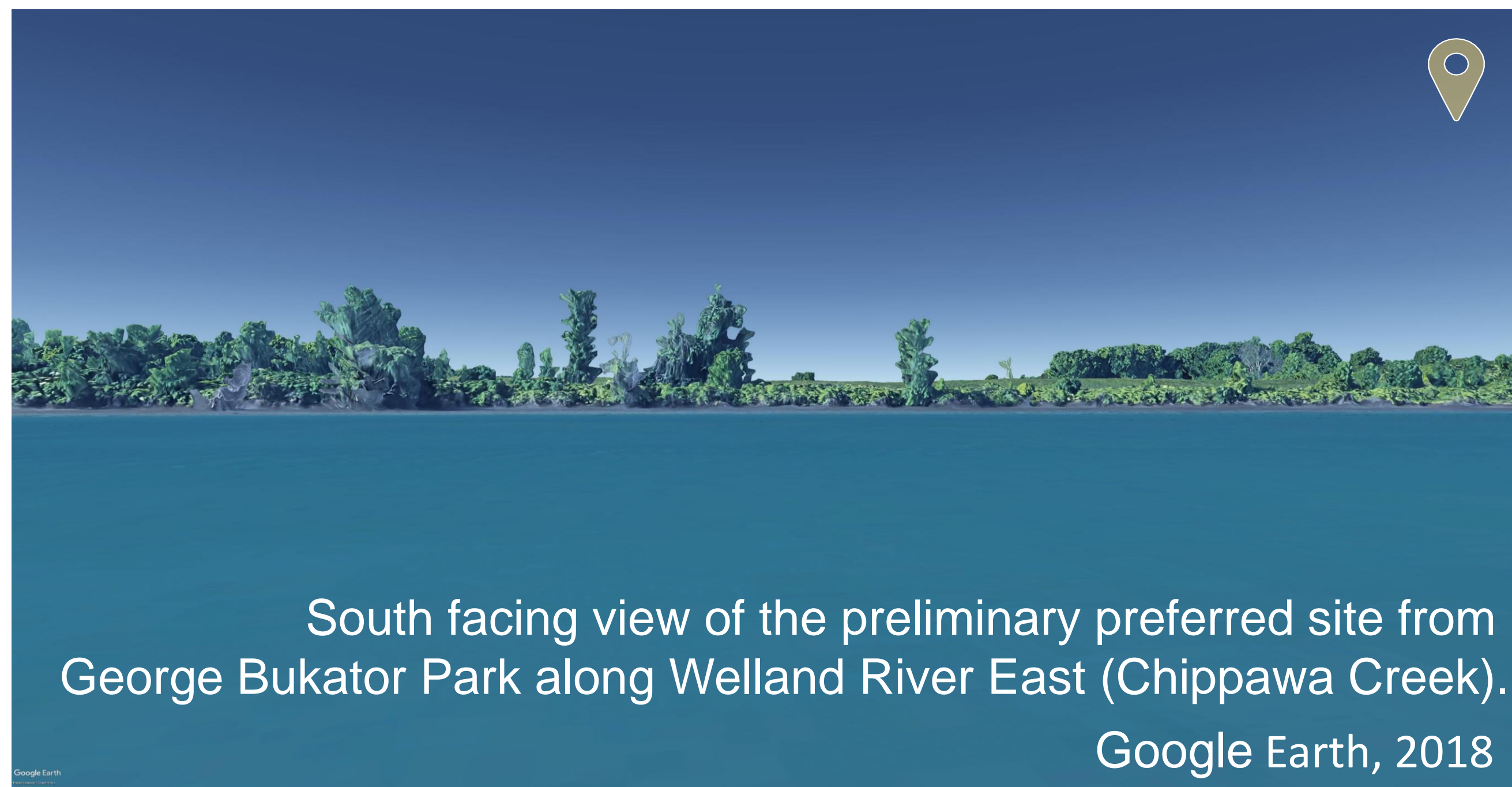
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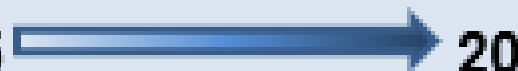


# Preferred WWTP Site

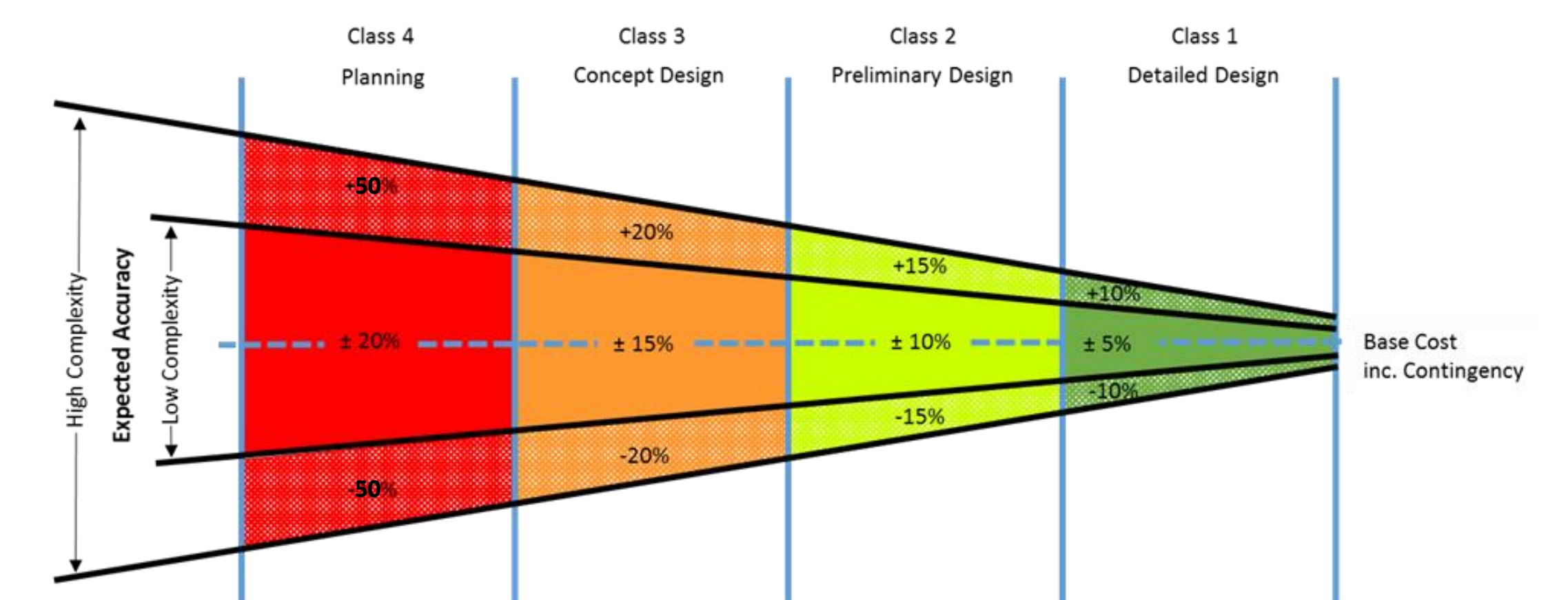




# Cost Estimation Principles and Accuracy

- Cost estimating accuracy will improve as a project moves through concept to design stages
- The MSP cost estimates are truly planning level and in some cases have limited information for costing
- Class EA cost estimates will start at planning/conceptual level in Phase 2 and will continue to improve in accuracy to conceptual/preliminary design level in Phase 3
- The Class EA process will result in complete refinement of the projects technically (design basis) as well as result in a more accurate budget level cost estimate

	Estimate Class	Estimate Class Description	End Usage / Major Deliverables	Accuracy Range (+/-)	
				Low Complexity	High Complexity
<b>D</b>	Class 4	Planning Cost Estimate	Concept Screening; justification for project planning funding. Minimum information requirements.	20  50	
<b>C</b>	Class 3	Concept Design Cost Estimate	Basis for budgeting and approvals.	15  20	
<b>B</b>	Class 2	Preliminary Design Cost Estimate	Used for project cost control during design; initial detailed estimate.	10  15	
<b>A</b>	Class 1	Detailed Design Cost Estimate	Final cost review in preparation for construction; tender ready.	5  10	



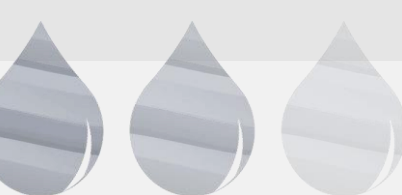


- Unit rates
- Specific project review
- Reference to previous/ongoing Region projects
- Industry benchmark
- Include construction as well as internal/external engineering costs etc
- Contingency
- Current year dollars

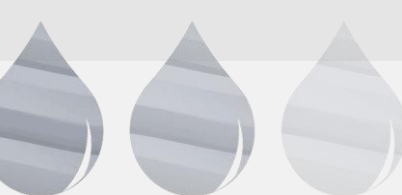


Project	Total Project Cost (\$M)
New SNF WWTP (NF)	\$ 192.7
New SNF WWTP Outfall (NF)	10.6
New South West Trunk Sewer - South Niagara Falls (NF)	85.3
New South West Trunk Sewer (NF/TH)	9.8
Black Horse Sewage Pumping Station (SPS) (TH)	4.4
Black Horse Forecemain (TH)	12.7
Peel Street SPS Upgrades and Forcemain (TH)	5.9
South Side High Lift Pumping Station Decommissioning (NF)	0.6
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	1.1
McLeod Road Overflow Diversion (NF)	1.9
<b>Total SNF Projects</b>	<b>\$ 325.1</b>

- Estimate developed in 2021\$ then indexed to future year \$
- Includes studies, engineering, internal, property and construction
- Strategy update results in some new post period development charge costs



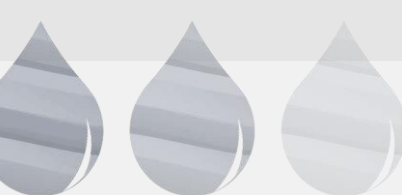
- The Class EA has established an optimized strategy that balances the needs for the plant, the outfall and collection system
- Meets the capacity needs for growth and addresses current limitations
- While costs have increased since the MSP, the long term strategy is enhanced and other efficiencies and cost savings have been gained
- The updated wastewater strategy that will provide improved level of service, enhanced ability to address wet weather flows, and greater flexibility for efficient servicing in the future
  - Incoming trunk sewer is at a depth to support servicing of broader growth areas including the Chippawa area
  - Trunk sewer is located to support future servicing east of the QEW, west of the QEW and other potential growth areas
  - Trunk sewer sizing will support managing wet weather flows to the plant (storage)
  - South Thorold infrastructure located to efficiently service future growth
- Reduction of existing Operation and Maintenance costs from SPS Decommissioning
- Reduction of Lifecycle costs (sustainability upgrades, major maintenance/rehabilitation/replacement) from SPS Decommissioning





- Currently completing Phases 3 and 4 of the Class EA
  - Undertaking more detailed investigations based on the preferred site and preferred collection strategy
  - Confirming Montrose Road or Oakwood Drive or OPG corridor for trunk sewer alignment
  - Completing more detailed environmental, cultural/heritage and archaeological investigations on the site and for the trunk sewer alignment
  - Completing more detailed geotechnical/hydrogeotechnical investigations on the preferred strategy
  - New archaeological information has come forward related to the site that will guide next steps
  - Confirming orientation of the facilities on the site as well as the outfall location at Chippawa Creek
  - Minimizing risk and surprises in next steps of implementation
  - Completing conceptual design by early 2021
- This will result in refinement of the strategy
- This will also result in another update to the program Cost Estimate in early 2021

- The SNF capital projects and required debt financing can be accommodated within a 2% rate increase in 2021 with the following key strategies:
  - Temporary reduction in the operating budget transfer to the WW capital reserves to provide required operating budget for Plant debt charges and operating costs.
  - Use of plant debt charge and operating budget will fund “pay as you go” infrastructure until the plant is operational
  - 5.15% rate increase from 2022 – 2028 required to re-establish the transfer to capital reserves to \$40 million from \$21 million in 2020 to support the asset management plan





# Project Budgets and Funding

Project	Development Charge %	Cost			Funding			
		Total Project Cost	Previously Approved	2021 Budget Request	External Funding	DCs (Debt)	Debt	Total
New SNF WWTP (NF)	65%	\$ 192.7	\$ (4.9)	\$ 187.8	\$ 108.0	\$ 51.8	\$ 27.9	\$ 187.8
New SNF WWTP Outfall (NF)	65%	10.6		10.6		6.9	3.7	10.6
New South West Trunk Sewer - South Niagara Falls (NF)	70%	85.3		85.3		59.7	25.6	85.3
New South West Trunk Sewer (NF/TH)	85%	9.8		9.8		8.3	1.5	9.8
Black Horse Sewage Pumping Station (SPS) (TH)	85%	4.4		4.4		3.7	0.7	4.4
Black Horse Forecmain (TH)	85%	12.7		12.7		10.8	1.9	12.7
Peel Street SPS Upgrades and Forcemain (TH)	85%	5.9		5.9		5.0	0.9	5.9
South Side High Lift Pumping Station Decommissioning (NF)	50%	0.6		0.6		0.3	0.3	0.6
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	50%	1.1		1.1		0.6	0.6	1.1
McLeod Road Overflow Diversion (NF)	50%	1.9		1.9		0.9	0.9	1.9
<b>Total SNF Projects</b>		<b>\$ 325.1</b>	<b>\$ (4.9)</b>	<b>\$ 320.2</b>	<b>\$ 108.0</b>	<b>\$ 148.2</b>	<b>\$ 64.0</b>	<b>\$ 320.2</b>

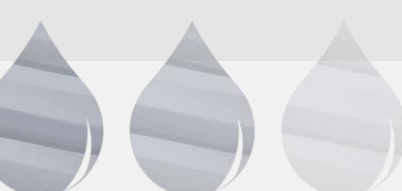
(NF) - Niagara Falls

(TH) - Thorold

Debt

**\$212.20**

- A key assumption in the funding of the SNF WWTP is the estimated \$108M of external funding
- The remaining \$212.2M of funding will come from Debt and Development Charges; future DC's will help fund a portion of the debt servicing cost





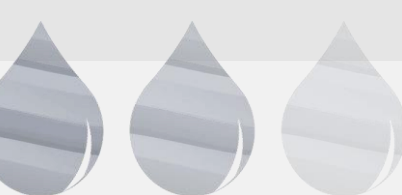
- Debt Issued may impact the S&P Ratio
  - Consolidated Region Debt - \$695.5M (Region - \$379.5M, LAM - \$316.4M)
  - End of Q2 2020 - \$273.3M of Regional unissued debt
- The project is contingent on grant funding in order to proceed with “Phase 2” capital budgets which include all project costs not related to design or land acquisition



- Recommendation to initiate the following capital projects in 2021:

Project	2021 Action	Initiated Budget
SNF WWTP	Land acquisition and design	\$26,176,240
New SNF WWTP Outfall	Design	\$780,400
New South West Trunk Sewer	Design	\$6,264,011
Black Horse SPS	Land acquisition	\$600,000
<b>Total</b>		<b>\$33,820,651</b>

- Further initiation of capital budget for “Phase 2” components would be done when external funding is confirmed



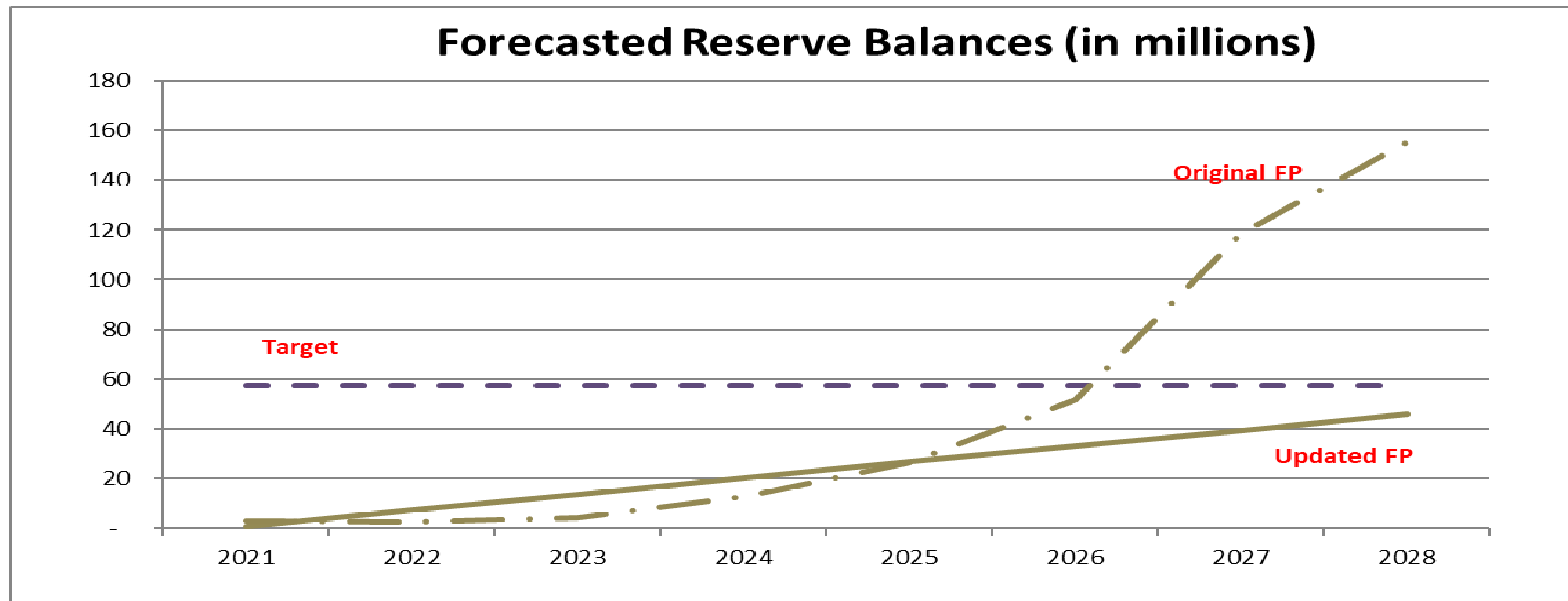
# Changes to Financial Plan – Operating Impacts

Description	Original Financing Strategy	Updated Financing Strategy	Variance	Notes
Annual Debt Charge Budget (net of DC recovery)	N/A	\$3.8M	(\$3.8M)	<ul style="list-style-type: none"><li>\$12.5M Debt Charge less (\$8.7M) DC Recovery = \$3.8M</li></ul>
Transfer to WW capital	\$21M	\$12.8M	\$8.2M	<ul style="list-style-type: none"><li>Reduction required to offset debt charges and operating impacts of SNF projects and maintain 2% budget strategy</li></ul>
Annual Operating, maintenance and lifecycle costs	N/A	\$6M	(\$6M)	<ul style="list-style-type: none"><li>Includes operational, maintenance, staffing costs associated with SNF projects</li></ul>
Annual Operating Savings	N/A	(\$.77M)	\$.77M	<ul style="list-style-type: none"><li>Savings associated with decommissioning of sewage pumping stations</li></ul>

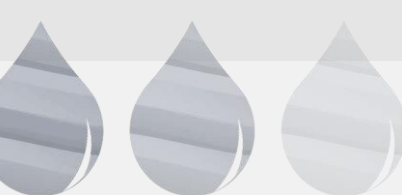


# Forecasted W/WW Reserve Balances

- Target - **\$56 M**
- Revised WW forecasted reserve balance of **\$46 M** in 2028
- Annual contributions to reserve in 2028 - **\$40 M**



- Clarity on cost estimating:
  - Current year dollar estimates
  - Indexed future year dollar estimates
  - Clarity on how these estimates are accounted for in budgeting, rates, development charges
- Acknowledge potential changes in scope / costs moving forward through the Class EA process and subsequently the detailed design process
- Further development and mitigation of project risks
- Understanding the full program budget





- SNF WW Program is a significant infrastructure program for the Region
- A sustainable financial plan has been established to deliver the program
  - Balancing funding, DC, budget impacts
  - Region can continue to support ongoing capital programs and future budgets
- SNF WW Program provides benefit to multiple municipalities
- The infrastructure is strategically located to support key planned and future growth areas
  - South Niagara Hospital
  - Active development interests
- Class EA process has been positive and successful to date
- Critical component of the Region's Strategic Plan and "How We Grow"





# Class EA Process Next Steps

## Schedule:

