
Report of the Commissioner of Public Works

Water and Wastewater Capital Infrastructure Status Update

1. Recommendation

The Regional Clerk circulate this report for information to the Ontario Ministers of Environment, Conservation and Parks, Municipal Affairs and Housing and Infrastructure, Clerks of the local municipalities, Building Industry and Land Development Association, and the Ontario Home Builders' Association.

2. Purpose

This report updates Council on status of key water and wastewater infrastructure projects required to support planned growth in York Region and ensure the existing system is maintained in a state of good repair.

Key Points:

- In [November 2023](#) staff provided an update to Council on servicing capacity available to support growth in areas within the York Durham Sewage System (YDSS) and stand-alone systems. Council authorized an additional capacity assignment of 88,740 persons to support forecasted development and Provincial housing targets
- As of the end of 2023, total available capacity for growth in municipalities serviced by YDSS is 242,279 persons, equivalent to about 80,000 new residential homes or more than half of the Provincial housing target for York Region
- 2024 Public Works Budget and 10-Year Capital Plan include \$4.4 billion in water and wastewater projects, including \$2.9 billion for growth infrastructure to provide servicing capacity in Regional water and wastewater systems and \$1.5 billion in proactive asset management to ensure continued water and wastewater system reliability
- Implementation of water and wastewater works identified in Public Works 10-Year Capital Plan is critical to deliver capacity needed to service planned growth and may be impacted by availability of funding

- On April 22, 2024 Minister of the Environment, Conservation and Parks notified the Region they are satisfied with the York Region Sewage Works Project report submission. The North YDSS Phase 1 Expansion is now underway

3. Background

About 80,000 new homes could be built today in municipalities serviced by the existing YDSS, achieving over half of the 150,000 Region-wide Provincial housing target

Regional water and wastewater servicing is required well in advance of new home sales and is essential for municipal growth. The amount of servicing capacity, expressed in persons, is “assigned” to local municipalities and, in turn, local municipalities “allocate” capacity to individual developments to support residential growth.

On [November 9, 2023](#), Council approved a capacity assignment of 88,740 persons to support forecasted development towards Provincial housing targets. Total available capacity of 242,279 persons at the end of 2023 can support about 80,000 new homes in municipalities serviced by the existing YDSS. Across the Region, including the Town of Georgina serviced by a Lake Simcoe-based stand-alone system, there is 249,618 persons of capacity towards building homes. Staff will follow up in Q4 2025 with the next capacity assignment report.

Capital Plan focuses on building the Regional water and wastewater network, sustaining service levels, and managing system risk and resiliency

Water and wastewater infrastructure works comprise 38% of the Region’s total 2024 10-Year Capital Plan compared to 31% in 2023. At the end of 2023, the capital program had 176 active projects, focused on building the Regional trunk system, maintaining infrastructure in a state of good repair, and managing system risk and resiliency. The number of active projects by delivery phase is summarized in Table 1.

Table 1
2023 Active Water and Wastewater Projects by Project Delivery Phase

Project Delivery Phase	Number of Active Projects
Planning	30
Environmental Assessment	3
Design	62
Construction	70
Warranty	11
Total	176

4. Analysis

The following sections provide an update on key water and wastewater projects under the following general headings: North YDSS Expansion, York Durham Primary Sewage System, Vaughan Servicing Projects, Additional Water and Wastewater Servicing Projects, Peel Region and City of Toronto Cost-Shared Projects. A project summary and location map are included in Appendices A and B, respectively.

NORTH YDSS EXPANSION

Province approves York Region Sewage Works Project for servicing northern communities

Enacted in November 2022, *Supporting Growth and Housing in York and Durham Regions Act, 2022* mandates the Region support growth and housing in Aurora, East Gwillimbury and Newmarket via a Lake Ontario-based servicing solution. October 31, 2023, York and Durham Regions submitted the comprehensive York Region Sewage Works Project Report for Provincial review and approval. The report outlines necessary work, costing, approvals, and mitigation measures for impacts of each project component. After concluding the public commenting period, including extensive consultation and engagement with interested persons and Indigenous communities, the Minister of the Environment, Conservation and Parks expressed satisfaction with the Project Report in an [April 22, 2024](#) letter. Per the letter, the project has been allowed to advance to implementation, subject to annual progress reports, interim reports on significant changes and a twice-annual Indigenous Community Progress Report.

North YDSS Expansion Phase 1 is underway to provide future system capacity

York Region Sewage Works Project Report identified 22 project components for North YDSS Expansion to fulfill the Lake Ontario-based servicing solution. North YDSS Expansion will be delivered in three phases as shown in Appendix C. Through a letter dated March 28, 2023, the Minister requested an aggressive implementation timeline with certain infrastructure components to be in service as early as the end of 2026. On [November 23, 2023](#), Council authorized negotiation and execution of two direct purchase agreements for North YDSS Expansion Phase 1, which are both underway. 2023 capacity assignment includes 7,171 persons of capacity for Aurora and Newmarket contingent on completion of North YDSS Expansion Phase 1. The balance of capacity from implementing the North YDSS Expansion Phase 1 will be assigned in the next capacity assignment in 2025.

Henderson Sewage Pumping Station achieved substantial performance to provide balance of interim servicing capacity

At its meeting of [June 28, 2018](#), Council authorized two interim infrastructure solutions to provide water and wastewater servicing capacity for 11,500 persons to support growth in Aurora, East Gwillimbury and Newmarket. Of this capacity, 10,500 persons were assigned subject to completion of two trigger capital projects. Upgrades to Aurora Sewage Pumping Station were completed in

2021, releasing 7,000 persons capacity. Henderson Sewage Pumping Station is also now commissioned, releasing 4,500 persons capacity.

YORK DURHAM PRIMARY SEWAGE SYSTEM

Phosphorus Reduction Action Plan upgrades unlock full treatment capacity of Duffin Plant in 2024

Phosphorus Reduction Action Plan construction upgrades began January 2022 and were completed ahead of schedule in spring 2024. Since completion, full treatment capacity of the Duffin Plant (630 megalitres per day) is now available to service planned growth for York and Durham Regions.

Future expansion needs of Duffin Plant were reviewed and included in the York Region Sewage Works Project as required by the *Supporting Growth and Housing in York and Durham Regions Act, 2022*. With the majority of York Region to be serviced well into the future by the Duffin Plant, additional treatment capacity will be required by 2036. Work will include a Stage 4 plant expansion to increase plant capacity to 940 megalitres per day and construction of a new three-kilometre outfall into Lake Ontario to discharge increased wastewater flow and replace the existing outfall.

Capital Plan includes \$223 million for Primary Trunk Sewer twinning project

The Primary Trunk Sanitary Sewer (Primary Trunk) is a critical section of YDSS, collecting wastewater flows from eight municipalities of York Region, Town of Ajax and City of Pickering. The southern section of the Primary Trunk, as shown on the map in Appendix B, will require a new trunk sanitary sewer parallel to the existing, referred to as “twinning”. The twinned sewer, about five kilometers long, will ensure essential service is maintained by increasing conveyance capacity and overall system security.

York Region and Durham Region have planned for Primary Trunk Twinning as part of long-term infrastructure needs of the shared system. The YDSS Primary Trunk Sanitary Sewer Environmental Assessment and Preliminary Design assignment was awarded in 2022. With the *Supporting Growth and Housing in York and Durham Regions Act, 2022* this project was exempted from the *Environmental Assessment Act*. The engineering assignment was leveraged to deliver a conceptual design as part of York Region Sewage Works Project Report. Field studies and preliminary design of the Primary Trunk are underway and progressing well. The twinned sewer is planned to be in service in 2030.

VAUGHAN SERVICING PROJECTS

Construction is progressing on West Vaughan Sewage Servicing projects

An Environmental Assessment for West Vaughan Sewage Servicing to service future growth of 33,200 persons and 50,100 employment population was completed in 2013. West Vaughan Sewage Servicing project includes 14 kilometres of trunk sewer, with 12 kilometres to be completed by 2028 and the remaining two kilometres completed after 2034. It includes expanding the Humber Sewage Pumping Station which is in construction and planned for completion by 2025. The trunk sewer

tender was released June 2023 and following negotiations for this complex construction contract, it was awarded April 2024.

Northeast Vaughan Water and Wastewater Servicing projects are underway to meet advanced construction timelines

The Environmental Assessment study to provide additional water and wastewater servicing capacity accommodating anticipated growth in Northeast Vaughan up to 2051 was filed in 2019. This servicing capacity includes 155,000 persons of residential and employment within the wastewater service area and 115,000 persons of residential and employment within the water service area.

In June 2020, Council authorized the Region to execute an agreement with the development community and Block 27 Landowners Group to advance construction of Northeast Vaughan Water and Wastewater Servicing (map Appendix B). Appendix D identifies current project status and planned in-service dates for servicing solutions.

ADDITIONAL WATER AND WASTEWATER SERVICING PROJECTS

Design projects are progressing for Nobleton Water and Wastewater Servicing

An Environmental Assessment was filed for the Nobleton community on November 3, 2021, recommending water and wastewater servicing solutions to accommodate planned growth to 10,800 persons. Preferred solutions include increasing existing well capacity and expanding capacity at the Janet Avenue Pumping Station and the Nobleton Water Resource Recovery Facility.

On [April 7, 2022](#), Council authorized the Region to enter into an advanced funding agreement with the Nobleton Developer Group for design of the Nobleton Water Resource Recovery Facility expansion and associated solutions recommended by the Environmental Assessment. Design services for well upgrades are progressing. New well construction is complete and advancing through permitting and approvals, planned for completion concurrent with upgrades to Nobleton Wells treatment facility in 2027. Engineering design assignments for Janet Avenue Pumping Station upgrades and Nobleton Water Resource Recovery Facility were advanced to 30% in 2023 and continue to be on track for completion of design in 2025.

Nobleton Developer Group has requested wastewater and water construction works be advanced immediately following completion of design to facilitate full buildout of their lands. Principles for a development charge credit agreement will be brought to Council in Q3, 2024.

Sutton Water Resource Recovery Facility expansion contingent on assessment of flows

Sutton Water Resource Recovery Facility was commissioned in 2003 with an original design capacity to service 7,500 persons. An Environmental Assessment for plant expansion to service up to 13,500 persons was completed in 2010.

Since 2016, the plant has been operating at less than 60% capacity and expansion works are forecasted in the Water and Wastewater Master Plan for the 2032-2041 timeframe. On [May 5, 2022](#), Council authorized the Region to enter into a prepaid funding agreement with Sutton Developer

Group for design and expansion of Sutton Water Resource Recovery Facility. In March 2024, Sutton Developer Group elected not to proceed with design services. In this case, the Region continues to monitor plant flows and study plant optimization opportunities. The future capacity expansion project will be assessed once flow reaches 70% of plant capacity which may occur within the next two to three years given current building activity by local development. An environmental assessment for expansion of High Street and Woodrider Bend Sewage Pumping Stations is being completed to position the Region to align timing of work in the stations with future plant capacity expansion.

North Markham Water and Wastewater Servicing Environmental Assessment initiated to service growth for City of Markham and Town of Stouffville

To service about 130,000 persons growth in whitebelt lands in north Markham and Stouffville, a water and wastewater environmental assessment is being advanced in 2024 as identified in the 2022 Water and Wastewater Master Plan. Additional water infrastructure will provide redundancy to existing Elgin Mills watermain in Markham and facilitate an additional Lake Ontario-based water connection for York Water System to service Aurora, Newmarket and East Gwillimbury. To meet anticipated growth in north Markham whitebelt lands, a new regional sewer along McCowan Road will be further explored as part of the environmental assessment. Construction is planned for mid-2030s. Potential changes to this timing will be assessed through monitoring of growth needs in these areas.

PEEL REGION AND CITY OF TORONTO COST-SHARED PROJECTS

Long-term servicing strategy continues to include Peel and Toronto cost-shared projects

Provision of water and wastewater services through partnerships with City of Toronto and Peel Region is fundamental to the Region's long-term servicing strategy. York Region staff conduct regular meetings with City of Toronto and Peel Region staff to discuss progress on achieving servicing commitments, including cost-shared project delivery schedules. Both Peel Region and City of Toronto are on track to meet their long-term water supply and wastewater servicing agreement commitments to York Region. Based on York Region's 2022 Water and Wastewater Master Plan, water supply from Peel Region combined with water supply from City of Toronto is anticipated to service growth to 2051 and beyond.

Peel and Toronto cost-shared projects progressing as expected to supply capacity to service growth

Active water cost-shared projects under construction with Peel include interconnection of the new 12-kilometre Hanlan watermain to the existing watermain and Beckett Sproule Pumping Station Expansion. The final phase of Hanlan watermain interconnection work is to be completed by Q4 2025. Beckett Sproule Pumping Station project is under construction, with completion by summer 2024. As for wastewater cost-shared projects, the GE Booth Lakeview Wastewater Treatment Plant Capacity Recovery project is underway to ensure stability of York Region's capacity needs into the future. The Capacity Recovery project started construction in 2022 and is scheduled to be completed in 2028.

City of Toronto continues to advance cost-shared projects to meet capacity commitments. Construction of Richview Pumping Station Standby Power is on track to achieve substantial performance in 2024. West Toronto Pumping Station Standby Power achieved substantial performance Q1 2024.

5. Financial Considerations

\$4.4 billion of capital water and wastewater infrastructure works are included in the 2024 Public Works Budget and 10-Year Capital Plan

2024 Public Works Budget and 10-Year Capital Plan include \$4.4 billion in water and wastewater projects. Of this total, \$2.9 billion is for growth infrastructure in the water and wastewater program, and \$1.5 billion is for rehabilitation and replacement. 2024 multi-year Capital Spending Authority for Public Works’ water and wastewater infrastructure projects is \$2.3 billion. Additional Capital Spending Authority will be requested annually through the budget process. A summary of key growth infrastructure project costs, based on the 2024 approved budget, is provided in Appendix E. A breakdown of estimated costs by program area is provided in Table 2.

Table 2
Public Works Water and Wastewater 10-Year Capital Plan Expenditures

Capital Program Area	Expenditures (2024 – 2033)
Key Growth Infrastructure Projects (detailed in Appendix E)	\$2,214.5M
Other Water Growth Capital Projects	\$277.7M
Other Wastewater Growth Capital Projects	\$448.5M
Water Rehabilitation/Replacement	\$563.5M
Wastewater Rehabilitation/Replacement	\$912.1M
Total	\$4,416.3M

Longevity of existing infrastructure is achieved through comprehensive asset management

One of Public Works’ key strategic goals involves proactively managing and maintaining infrastructure to ensure reliability and compliance with all regulatory requirements. Accordingly, the department monitors condition and performance of the Region’s multi-billion-dollar asset base. Infrastructure rehabilitation and replacement requirements to maintain current levels of service are estimated at about \$1.5 billion over the next 10 years. Some key projects and programs include: Duffin Creek Incinerator Replacement Project, YDSS Rehabilitation Program, Ductile Iron Watermain Replacement Program, Inflow and Infiltration Reduction Program, Groundwater Treatment Program, Water Storage Reservoir Rehabilitation Program, and Elevated Water Tank Rehabilitation Program.

Project timelines may be impacted by availability of funding

Project delivery timelines established in the 2024 10-Year Capital Plan may be impacted by availability of funding. Amendments to the *Development Charges Act, 1997* under *More Homes Built Faster Act, 2022* result in annual development charge collection reductions and without additional funding from senior levels of government, could impact timing of infrastructure delivery.

The Region continues to assess development charge collections and project timelines as part of the Regional Fiscal Strategy and each annual budget process. Though the 2024 10-Year Capital Plan includes \$593 million for advancing Phases 2 and 3 of North YDSS Expansion, Region financing of these projects using its own resources will cause debt to elevate and be maintained well above sustainable levels by 2033. Staff are pursuing funding opportunities with senior levels of government including a \$140 million joint application with the Towns of Aurora, East Gwillimbury and Newmarket to provincial Housing-Enabling Water Systems Fund for projects in Phase 1 of the North YDSS Expansion.

Program delivery timing and cost escalation risks are managed through the annual budget process

The construction industry continues to go through a volatile period due to world events and economic pressures. High demand for construction materials and skilled labour, coupled with workforce shortages and inflation, appears to continue to drive up prices, impacting capital costs and project plan predictability. In delivering the 10-Year Capital Plan, these capital cost escalation and project timing risks are being closely monitored and managed through the annual budget process by communicating changes as projects advance through planning and design.

6. Local Impact

Region continues to work closely with cities and towns to facilitate community growth

Priority projects detailed in this report are crucial to providing timely servicing capacity to municipalities. This water and wastewater capacity is necessary to meet planned growth expectations while maintaining a high level of environmental and public health protection. Continued support from local municipalities on inflow and infiltration reduction efforts and commitments to new development standards will help support capacity management in the system.

The next capacity assignment report is planned for Q4 2025. A collaborative approach with local municipalities will continue to assist with reporting on their local capacity allocation in a timely manner to both support their respective capacity allocation and future growth commitments. Accurate, timely and transparent data exchanges are foundational to optimize infrastructure delivery in a financially sustainable way avoiding early-stage servicing challenges.

7. Conclusion

\$4.4 billion 10-Year Capital Plan includes required projects for current and future capacity assignments

This report provides Council with a status of priority projects within the 10-Year Capital Plan and their relationship to timing of servicing capacity. Overall, 70 active construction projects are underway and no major construction delays are anticipated at this time. Continuing to monitor these projects will ensure capacity assignment is synchronized with project delivery schedules.

The Region will continue to monitor development charge collections and, where appropriate, continue to look for other funding sources to support delivery of future housing-enabling growth infrastructure.

For more information on this report, please contact Pina Accardi, Director, Capital Delivery, Water and Wastewater, Public Works at 1-877-464-9675 ext. 75355. Accessible formats or communication supports are available upon request.

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Appendix A – Status of Key Growth Infrastructure Projects

Appendix B – Key Growth Infrastructure Projects Location Plans

Appendix C – North YDSS Expansion Project Components

Appendix D – Northeast Vaughan Servicing Projects

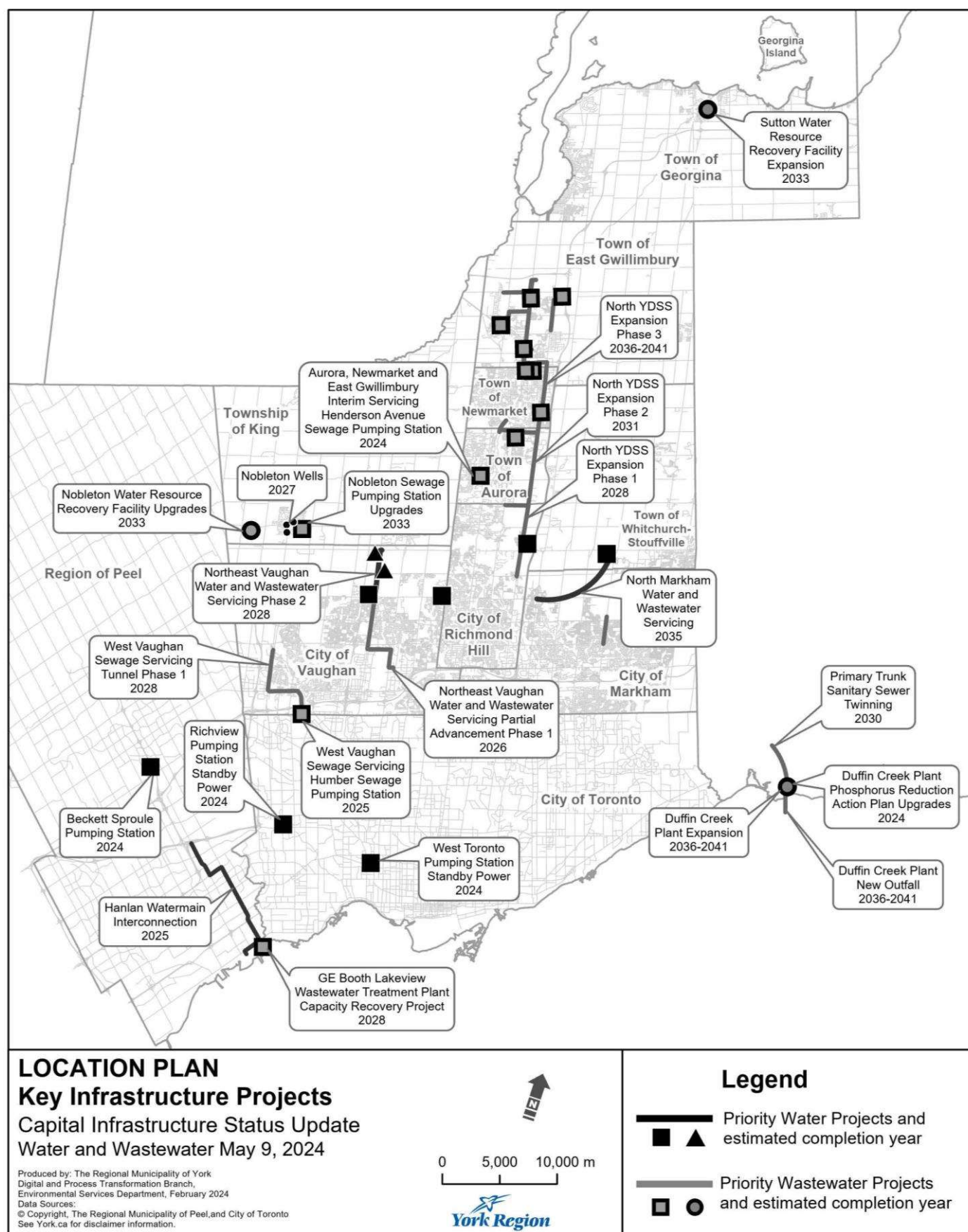
Appendix E – Cost Estimates for Key Growth Infrastructure Projects

Status of Key Growth Infrastructure Projects

Project Name	Description	Current Status	Expected Project Commissioning Date
North YDSS Expansion	Multiple phases of North YDSS expansion projects	Field Studies / Preliminary Design	Refer to Appendix C
Aurora, Newmarket and East Gwillimbury Interim Infrastructure Solutions	Henderson Sewage Pumping Station	Substantial Performance	2024
Duffin Creek Plant	Phosphorus Reduction Action Plan Upgrades	Construction	2024
YDSS Primary System Expansion	Primary Trunk Sanitary Sewer Twinning	Field Studies / Preliminary Design	2030
	Duffin Creek Plant Stage 4 Expansion	Project Report	2036-2041
	Duffin Creek Plant New Outfall	Project Report	2036-2041
South YDSS Expansion	Markham Collector Twinning	Project Report	2033-2041
West Vaughan Sewage Servicing	Humber Sewage Pumping Station	Construction	2025
	Tunnel Phase 1	Construction	2028
Northeast Vaughan Servicing	Water and wastewater servicing solution partial advancement Phase 1	Tendering	2026
	Water and wastewater servicing Phase 2	Detailed Design	2028
Nobleton Water and Wastewater Servicing	Nobleton Wells	Detailed Design	2027
	Nobleton Water Resource Recovery Facility Upgrades ¹	Detailed Design	2033

Project Name	Description	Current Status	Expected Project Commissioning Date
	Nobleton Sewage Pumping Station Upgrades ¹	Detailed Design	2033
Sutton Water Resource Recovery Facility	Expansion of existing facility to accommodate growth in Sutton	Detailed Design	2033
North Markham Water and Wastewater Servicing	Water Servicing	Environmental Assessment	2035
	Wastewater Servicing	Environmental Assessment	2035
Peel Region Wastewater Cost-shared Projects	Hanlan Watermain Interconnection	Construction	2025
	Beckett Sproule Pumping Station	Construction	2024
Peel Region Wastewater Cost-shared Projects	GE Booth Lakeview WWTP Capacity Recovery Project	Construction	2028
City of Toronto Cost-shared Projects	Richview Pumping Station Standby Power	Construction	2024
	West Toronto Pumping Station Standby Power	Construction	2024

1. Under consideration for third party financing to advance completion timing.



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North YDSS Expansion Project Components

Delivery Phase	Project Components	Anticipated Completion Date	Estimated Construction Cost*
Phase 1	Leslie Street Trunk Sewer Phase 1 (19 th Ave to Bloomington Road) Aurora Pumping Station Gravity Sewer Twinning Second Concession Pumping Station Upgrade Second Concession South Gravity Sewer Second Concession North Gravity Sewer Newmarket Pumping Station Upgrades Bloomington Interceptor Sewer	2027/2028	\$500+ million
Phase 2	Leslie Street Trunk Sewer Phase 2 (Bloomington Road to St. John's Sideroad) Aurora East Pumping Station Gravity Interconnection Aurora East Pumping Station Aurora East Pumping Station Forcemains Queensville East Pumping Station Queensville East Pumping Station Forcemains	2031	\$550 – 650+ million
Phase 3	Mulock Pumping Station Mulock Pumping Station Forcemains Leslie Street Trunk Sewer Phase 3 (Greenlane to Mulock Drive) Newmarket East Pumping Station Newmarket East Forcemains Holland Landing Pumping Station Upgrade Queensville West Pumping Station Upgrades Bogart Pumping Station Upgrades Yonge Street Sewer Rehabilitation	2036/2041	\$500 – 600+ million

* All costs represent York Region's share

Northeast Vaughan Servicing Projects

Project	Status	Planned In-Service
Water Servicing – Phase 1 New pumping station in the Jane Street and Teston Road area New pumping station and elevated tank north of the Jane Street and Kirby Road intersection	Tendered	2026
Water Servicing – Phase 2 New elevated tank west of the Jane Street and King-Vaughan Road intersection	In design, anticipated tender release in 2026	2028
Wastewater Servicing – Phase 1 1.9-kilometre section along Keele Street from south of Rutherford Road to Langstaff Road, and then east crossing Keele Street to an area just south of Langstaff Road	Tendered	2026
Wastewater Servicing – Phase 2 4.5-kilometre section along Jane Street from Teston Road to south of Rutherford Road Small (180 metre) relief sewer section located south of Rutherford Road, between Jane Street and Keele Street, in the existing Jane-Rutherford Sanitary Trunk Sewer easement	In design, anticipated tender release in 2026	2028

Cost Estimates for Key Growth Infrastructure Projects

Project	Estimated Total Project Cost	10-Year Capital Plan Expenditures ¹ (2024-2033)
North YDSS Program Management	\$19.0M	\$14.0M
North YDSS Expansion Phase 1	\$501.0M	\$501.0M
North YDSS Expansion Phase 2 ²	\$577.5M	\$577.5M
North YDSS Expansion Phase 3 ²	\$655.1M	\$15.6M
Aurora, Newmarket and East Gwillimbury Interim Servicing ³	\$56.9M	\$1.9M
Duffin Plant Outfall and Phosphorus Reduction Action Plan Upgrades	\$22.9M	\$0.1M
Primary Trunk Sanitary Sewer	\$230.6M	\$222.9M
West Vaughan Sewage Servicing	\$519.2M	\$387.7M
Northeast Vaughan Water and Wastewater Servicing	\$334.7M	\$274.2M
Sutton Wastewater Servicing	\$66.6M	\$45.2M
North Markham Water and Wastewater Servicing	\$195.7M	\$103.9M
Nobleton Water and Wastewater Servicing	\$30.2M	\$25.9M
Peel Region Water Cost-shared Projects	\$547.5M	\$16.7M
Peel Region Wastewater Cost-shared Projects	\$69.6M	\$6.8M
City of Toronto Cost-shared Projects	\$305.1M	\$21.1M

Project	Estimated Total Project Cost	10-Year Capital Plan Expenditures ¹ (2024-2033)
Estimated Total Project Cost and 10-Year Plan Capital Expenditures	\$4,131.6M	\$2,214.5M

1. Costs under review as projects advance and will be updated as part of annual budget process.
2. Accelerated inclusion of North YDSS Expansion Phases 2 and 3, in advance of inclusion in the next development charge bylaw update, was approved by Council as part of the 2024 Budget. Projects are contingent on securing prepaid development charge credit agreements and/or senior level government funding.
3. Project received \$8.28 million from the Disaster Mitigation and Adaptation Fund.