CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Hamilton Water Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	September 30, 2024
SUBJECT/REPORT NO:	Dundas Wastewater Treatment Plant Upgrades (PW24059) (Ward 13)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Stuart Leitch (905) 546-2424 Ext. 7808
SUBMITTED BY: **SIGNATURE**	Nick Winters Director, Hamilton Water Public Works Department 

RECOMMENDATION

(a) That the budget for capital project ID 5161266213 - Dundas Wastewater Treatment Plant Improvements be increased by $110M in the recommended 2025 Water, Wastewater, and Stormwater Rate Budget, to fully fund the Dundas Wastewater Treatment Plant upgrades,

(b) That the Hamilton Water Divisional staff complement be increased by two new permanent Full-Time Equivalents as detailed in Appendix “A” to Report PW24059 to deliver the Dundas Wastewater Treatment Plant upgrades,

(c) That the two Full-Time Equivalents identified in recommendation (b) to Report PW24059 be funded from capital project ID 5161266213 - Dundas Wastewater Treatment Plant Improvements at an approximate annual cost of $335K; and,

(d) That staff be authorized and directed to pursue the acquisition of property within the Dundas area to replace the Martino Memorial Park amenities that will be repurposed for the Dundas Wastewater Treatment Plant upgrades, and to meet any other Parks Masterplan requirements in the area if possible, and report back

on potential locations, property costs, and required capital investment.

EXECUTIVE SUMMARY

The Dundas Wastewater Treatment Plant is a conventional activated sludge facility established in 1962 that received a major upgrade in 1977, and a second major upgrade (the addition of a tertiary filtration process) in 1988. It discharges treated final effluent to Cootes Paradise via the Desjardin's Canal. The City of Hamilton's (City's) Waterworks Asset Management Plan (2022) identified that the condition of the Dundas Wastewater Treatment Plant is rated as Poor due to significant deterioration as well as major parts of the plant processes and structures reaching the end of their normal service life.

Over the last several years, Hamilton Water developed a comprehensive capital upgrade plan for the Dundas Wastewater Treatment Plant. These upgrades will fully restore the facility to a condition rating of Good, while supporting the community of Dundas for future generations and meeting the City's commitment to environmental stewardship and the Hamilton Harbour Remedial Action Plan. Recent Hamilton Harbour Remedial Action Plan correspondence has indicated support for the proposed upgrades based on positive environmental benefits. This effort is being undertaken with careful consideration of various critical factors including existing site constraints, treated final effluent criteria, and life cycle costs.

In 2024, the Capital Delivery section in Hamilton Water completed a conceptual design for the wastewater treatment plant in collaboration with various City divisions. This work included a thorough technology screening and evaluation process targeting Best Available Technology that can achieve proposed treated final effluent criteria, and the development of a constructability and sequencing approach to the wastewater treatment plant upgrade.

The Dundas Wastewater Treatment Plant upgrade conceptual design considered the need for additional space to accommodate new treatment facilities. The land adjacent to the existing facility is home to Martino Memorial Park (currently a baseball diamond). The park is constructed on lands that were purchased in 1919 for utility purposes and has been identified as space required to accommodate the wastewater treatment plant upgrade. The additional space is required to facilitate the upgrades through a multi-year construction project, while ensuring uninterrupted operation of the existing facility. This approach will reduce construction risks, shorten overall project duration, lower project costs, and minimize disruptions to the community during construction. Recommendation (d) in Report PW24059 directs staff to work towards identifying locations and costs to replace the Martino Memorial Park amenities, and staff in Hamilton Water will collaborate with the Environmental Services and Recreation Divisions regarding alternative park locations and timing.

The estimated capital cost for the Dundas Wastewater Treatment Plant upgrade project is $252M, including inflation, engineering, construction, and contingency. The project design is anticipated to commence in 2025 with construction starting in 2028 and completion by 2033.

Recommendation (a) in Report PW24059 provides additional capital funds of $110M in the recommended 2025 Water, Wastewater and Stormwater Rate Budget to fully fund the Dundas Wastewater Treatment Plant upgrades. Recommendations (b) and (c) in Report PW24059 provide the required staff resources to successfully design, construct and commission the extremely complex capital upgrades at this critical wastewater treatment facility.

Alternatives for Consideration – See Page 13

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Recommendation (a) will increase the budget in capital project ID 5161266213 - Dundas Wastewater Treatment Plant Improvements by $110M (from $142M to $252M). In addition, the project cashflow will be adjusted to reflect the updated project costs. The updated project budget will be incorporated into the recommended 2025 Water, Wastewater, and Stormwater Rate Budget.

The staffing additions in recommendation (b) will be funded through the existing approved water, wastewater, and stormwater capital program, specifically capital project ID 5161266213 - Dundas Wastewater Treatment Plant Improvements. The approximate annual cost of these Permanent Full-Time Equivalents is $335K. Individual position costs are identified in Appendix “A” to Report PW24059.

Report PW24059 does not identify land acquisition or capital costs required to replace the Martino Memorial Park amenities. Staff will identify those costs for consideration in a future report, once any alternative location(s) and costs are known.

Staffing: The recommendations outlined in this report will increase the Hamilton Water Divisional staffing complement by two permanent full-time equivalents.

Legal: N/A

HISTORICAL BACKGROUND

The Dundas Wastewater Treatment Plant is located at 135 King Street East in Dundas, Ontario and began operations in 1919. The original facility consisted only of grit channels and an Imhoff tank. Over time, the plant underwent several significant upgrades, including adding new treatment processes and expanding and enhancing existing processes.

Currently, the Dundas Wastewater Treatment Plant is a conventional activated sludge facility with tertiary treatment. The plant serves a population of approximately 50,360 people and features an average day design capacity of 18,200 cubic meters per day (m3/day), which is the basis of the Ministry of the Environment, Conservation and Parks (Ministry) Certificate of Approval. The plant consists of two treatment trains, Plant A and Plant B, which were constructed in 1962 and 1977, respectively. Tertiary sand filtration was added in 1988. Excess flows are diverted via the Dundas Equalization Tank to the catchment of the Woodward Avenue Wastewater Treatment Plant. The Dundas Wastewater Treatment Plant treated an average of 11,790 m3/day in 2023 and 10,280 m3/day in 2022. The Dundas Wastewater Treatment Plant does not feature its own solids treatment processes. Instead, trucks are used to haul sludge from the facility to the Woodward Avenue Wastewater Treatment Plant, where it is mixed and processed with the sludge at that larger facility.

The Dundas Wastewater Treatment Plant currently releases treated final effluent into Cootes Paradise Marsh via the Desjardin's Canal. The Cootes Paradise Sanctuary is an environmentally protected area and the largest fish hatchery in Lake Ontario.

Hamilton Water completed an assessment and Facility Plan for the Dundas Wastewater Treatment Plant in February 2015. The assessment findings determined that due to the age and condition of Plant A, it required replacement. Furthermore, Plant B and other auxiliary process tankage, including sludge storage, tertiary process, and phosphorous chemical systems, were also approaching the end of their life cycle.

In 2016, an evaluation study of the Best Available Technology was completed that considered various technologies that would achieve the treated final effluent criteria proposed by the Hamilton Harbour Remedial Action Plan's Cootes-Grindstone Water Quality Targets Subcommittee. This evaluation study considered long-term operations and maintenance, utilizing a net present value approach for the Dundas Wastewater Treatment Plant upgrades. That work has been updated in 2024 to provide the basis for Report PW24059.

Leveraging technology to achieve environmental benefits was a core goal for this work. The Hamilton Harbour Remediation Action Plan was developed to restore and protect environmental quality and beneficial uses in Hamilton Harbour. The Hamilton Harbour

Remediation Action Plan's Cootes-Grindstone Water Quality Targets Sub-Committee was responsible for developing the treated final effluent targets for the upgraded Dundas Wastewater Treatment Plant. The Primary members of this subcommittee include the Royal Botanical Gardens, the City, the Ministry, Environment Canada, Fisheries & Oceans Canada, the Hamilton Conservation Authority, and Conservation Halton. In 2023, the City met with the Hamilton Harbour Remedial Action Plan office, Royal Botanical Gardens, and the Ministry to discuss further refinement of the environmental effluent targets that can be achieved.

In July 2024, the City received correspondence from the Hamilton Harbour Remedial Action Plan Coordinating Committee (Coordinating Committee) attached as Appendix "B" to Report PW24059. The Coordinating Committee supports the Cootes-Grindstone Water Quality Targets Subcommittee recommendation (attached as Appendix "C" to Report PW24059) and advises that the total phosphorus target of 0.05 mg/L treated final effluent concentration at the Dundas Wastewater Treatment Plant be adopted and maintained. The Coordinating Committee recognized the reduction in treated final effluent total phosphorus as critical to achieving restoration goals for water quality and aquatic habitat in Cootes Paradise Marsh. The Coordinating Committee also supports reductions of total suspended solids and total ammonia nitrogen that are consistent with Best Available Technology.

Hamilton Water has developed a comprehensive upgrade approach to enhance plant treated final effluent using a modern process and technology that can meet the effluent quality targets supported by the Coordinating Committee.

In 2024, Hamilton Water in collaboration with various City divisions and an engineering consultant firm, completed a conceptual design and evaluation study for the Dundas Wastewater Treatment Plant (see Appendix "D" to Report PW24059 - Dundas Wastewater Treatment Plant Upgrades – Conceptual Design Report). This study involved a comprehensive screening and evaluation process to select the Best Available Technology to meet the proposed effluent criteria and assess the necessary upgrades to achieve various performance levels. This process evaluated several options and costs, taking into consideration long-term operations and maintenance reflected in a net present value approach. Further consultation with the Ministry will take place once the Dundas Wastewater Treatment Plant upgrade project capital design commences to discuss and confirm compliance with effluent targets.

The Dundas Wastewater Treatment Plant capital upgrades include a plan that requires additional space for the new treatment facility. The Martino Memorial Park, presently utilized as a baseball diamond and located east of the existing Dundas Wastewater

Treatment Plant facility will need to be repurposed to create the space required for the Plant upgrades.

Although the deed for the Martino Memorial Park lands shows 1919, the Town of Dundas formally acquired this parcel from the Lund Estate in 1949 via registration DN11430. No registered easements or encumbrances are shown in the title abstract. It is also noted from the archived document that the land began to be used as a baseball diamond in 1989 based on an agreement between the Dundas Friends of Baseball and the Department of Parks and Recreation, Town of Dundas.

Repurposing Martino Memorial Park is key for a practical and efficient approach to a new and upgraded Dundas Wastewater Treatment Plant. This approach will provide space to construct the new facility while ensuring uninterrupted operation of the existing processes. Consequently, this approach will mitigate some construction risks, reduce overall duration, minimize project costs, and limit disruptions to the community during the construction phase. Hamilton Water is collaborating with the Environmental Services and Recreation Divisions regarding alternative locations for the Martino Memorial Park amenities.

The following overview outlines the core elements of the Dundas Wastewater Treatment Plant upgrade project including cost and schedule as follows:

- Capital Cost Estimate: $252M (including inflation, engineering, construction, and contingency)
- Schedule Estimate:
  - Design: 2025 to 2028
  - Construction: 2028 to 2033

Dundas Wastewater Treatment Plant Upgrades Major Scope Items (refer to Appendix “E” to Report PW24059, Facility Upgrade Plan Dundas Wastewater Treatment Plant Process Flow Diagram for a summary of the proposed treatment process).

Upgrades	Description
Preliminary Treatment	
King Street Pumping Station	Given the age of the existing King Street Pumping Station and the inability to isolate the pumps for maintenance, replacement of the pumping station is required.
Headworks	New headworks is required due to the existing infrastructure's age and to provide system redundancy. Raw influent will be conveyed to the new headworks by gravity from the existing influent diversion chamber.

Upgrades	Description
Grit Removal system	Screened influent wastewater would be directed towards the vortex grit removal tanks. The grit slurry would be pumped to two grit classifiers which separate the organics and excess water from the grit and convey the grit to conveyors discharging into disposal bins.
Odour Control	Odorous air would be collected and treated from the Headworks' inlet, screening channels, and grit removal influent and effluent channels.
Biological Treatment	
Aeration Tanks	Construction of three new rectangular plug-flow aeration tanks in parallel. Each tank would have a small swing anoxic selector zone for filamentous bacteria mitigation. The provision of a swing anoxic zone reduces aeration requirements and improves sludge settleability.
Blower Building	The New Blower Building will be located north of the aeration tanks and consist of four blowers (three duty and one standby) on the main floor of the new Blower Building.
Membrane Cassette Tanks	Four membrane bio reactor cassette tanks, sized to provide firm capacity for maximum month flow. The membranes separate the sludge portion of the wastewater from the liquid treated portion.
Scour Blowers	Four scour blowers would be located in the Membrane Equipment and Disinfection Building. Each blower would provide scour for one of the membrane tanks. The self-leaning air scour allows membrane bio reactor operation to be "hands-off", with little to no operator intervention.
Permeate Pumps and Back pulse Tank	The permeate pump system consists of four pumps, one per membrane train. These pumps would pull biologically treated effluent through the membrane cassettes and discharge permeate to the back pulse tank and pumped to a new UV disinfection facility.
Return Activated Sludge /Waste Activated Sludge	The Return Activated Sludge/Waste Activated Sludge pumps would be operated continuously to direct return-activated sludge to the aeration tank and waste-activated sludge to the sludge handling facility.

Upgrades	Description
Effluent Disinfection	
Ultraviolet (UV) Disinfection System	The UV equipment and associated electrical equipment will be located in the Membrane and Disinfection Building and will provide disinfection for the plant effluent flows. UV disinfection will be provided in three UV channels, with two channels acting as duty and the third as bypass/allowance for a future UV unit.
Chemical Addition	
Chemical System	It is anticipated the new Wastewater Treatment Plant would require, at minimum, three chemical systems: • Ferric Sulphate for phosphorus removal • Citric Acid for membrane cleaning (i.e., removing organic foulants from the membrane) • Sodium Hypochlorite for membrane cleaning (i.e. removing inorganic scaling from the membrane)

Sludge Handling System	
Sludge Holding Facility	The sludge would be stored in two covered tanks on site, each equipped with a mixing system. The sludge loading pumps would convey sludge from the tanks to trucks for transport to the Woodward Wastewater Treatment Plant.
Dundas Wastewater Treatment Plant Outfall	
Existing Outfall Modification	A new gravity sewer would be installed to tie into the existing outfall of Desjardins Canal. The new gravity sewer would extend from the discharge of the effluent disinfection to an existing maintenance chamber on King Street connecting to the existing 750 mm diameter outfall.

Administration Building and Centre of Excellence:

Upgrades	Description
Administrative Building	The building would provide access to plant areas including the Membrane and Disinfection Building and the Aeration Tanks, and will include the following spaces: • Offices and workstations • Meeting spaces and boardrooms

Upgrades	Description
	• Public presentation and display areas • Operational laboratory • Supervisory Control and Data Acquisition control room • Locker rooms • Washrooms • Lunchroom
Centre of Excellence	The building is intended to facilitate community integration and public education on wastewater management services, as well as to provide spaces for training, innovation, and collaboration. The Centre of Excellence areas would be isolated from staff areas and access to either area would be controlled.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The recommendations in Report PW24059 are aligned with the City's Strategic Asset Management Policy, and specifically the principle of Long-term Sustainability and Resilience.

The recommendations are also aligned with the City's ongoing partnership with the Hamilton Harbour Remedial Action Plan and historic investments that the City has made to support the recovery of Hamilton Harbour as an Area of Concern as identified through the Great Lakes Water Quality Agreement.

The Dundas Wastewater Treatment Plant upgrades are required to meet or exceed the regulatory requirements stipulated by (2008) Ministry of the Environment Design Guidelines for Sewage Works, the Wastewater Systems Effluent regulations made under the *Federal Fisheries Act* (R.S.C., 1985, c. F-14), and the Provincial *Occupational Health and Safety Act*, R.S.O. 1990. In addition, a new Environmental Compliance Approval will be required in accordance with the *Provincial Ontario Water Resources Act*, R.S.O. 1990, c. O.40.

RELEVANT CONSULTATION

The following groups have been consulted and are supportive of the recommendations in this report:

- Financial Planning Administration and Policy Division, Corporate Services Department
- Hamilton Water Division, Public Works Department

- Environmental Services Division, Public Works Department
- Recreation Division, Healthy and Safe Communities Department
- Corporate Real Estate Office, Planning and Economic Development Department

The Ward 13 Councillor has been consulted to communicate the intent of this report and its recommendations.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The recommendations in Report PW24059 will ensure that Hamilton Water has the required resources to successfully design, construct and commission an extremely complex capital upgrade at the Dundas Wastewater Treatment Plant, and further that required wastewater treatment services are available for the community of Dundas.

In 2024, Hamilton Water completed a conceptual design and evaluation study for the Dundas Wastewater Treatment Plant to identify the Best Available Technology that can meet the treated final effluent criteria and the associated required upgrades. The evaluation, which considered various options and costs with a focus on achieving Hamilton Harbour Remedial Action Plan targets and long-term operations and maintenance objectives, recommended a membrane bioreactor process. As part of the conceptual design, a life cycle assessment was completed that compared several upgrade options and evaluated the long-term costs to the City. The lifecycle assessment report has been included as Appendix “F” to Report PW24059.

Based on the evaluation, retaining the existing conventional treatment technology was deemed impractical. A like-for-like replacement of the Dundas Wastewater Treatment Plant would only manage the facility’s average daily flow, with no ability to treat peak flow volumes. Although a like-for-like replacement would have a lower cost (estimated at $190M or approximately 24% less than the $252M membrane bioreactor facility), the facility would not meet the treated final effluent quality targets supported by the Hamilton Harbour Remedial Action Plan Coordinating Committee, nor effectively handle peak flows during storm events. The existing process is designed to divert excess flows to the Woodward Wastewater Treatment Plant which increases the risk of environmental overflows in the Woodward wastewater collection system. However, a membrane bioreactor facility will meet all the environmental objectives and provides climate change resiliency for the community of Dundas and for the Woodward wastewater collection system.

Alternatively, replacing the existing facility with a larger conventional technology to manage peak flows is estimated to cost $308M, approximately 22% more than the membrane bioreactor facility. Similar to a like-for-like replacement, a larger facility with conventional technology would not meet the treated final effluent quality targets supported by the Hamilton Harbour Remedial Action Plan Coordinating Committee.

In contrast, the membrane bioreactor process offers both environmental and cost benefits over the more conventional technology. While the conventional system relies on preliminary clarification, aeration, secondary clarification, and filtration, the membrane bioreactor combines these steps into a single consolidated process. This integration enhances solids retention, reduces the need for additional post-treatment, and provides higher-quality effluent with lower operational complexity and a smaller footprint.

Based on the life cycle cost analysis, the evaluation criteria compared the preferred membrane bioreactor facility with a conventional treatment facility. The preferred membrane approach ranked favourably, with a 30-year Net Present Value (NPV) cost of $342 million. This total includes a capital cost of $252 million and an operation and maintenance cost of $86 million.

The recommended resource structure for the Dundas Wastewater Treatment Plant upgrade includes dedicated Capital staff with project support from Operations, Supervisory Control and Data Acquisition (SCADA) and Maintenance. However, Report PW24059 only includes recommendations related to the dedicated Capital staff. This is because the Dundas Wastewater Treatment Plant upgrade is planned to be supported by the same Operations, Supervisory Control and Data Acquisition and Maintenance positions that were previously identified for Council in the June 17, 2024, Public Works Committee Report addressing the Woodward Water Treatment Plant Phase 2 Upgrades (Report PW22078(a)). Report PW22078 (a) included a recommendation "that three permanent Full-Time Equivalents be included in the recommended 2025 Water, Wastewater and Stormwater Rate Budget to provide operational support for the Woodward Water Treatment Plant Phase 2 Upgrades and other large capital upgrades at the City’s wastewater treatment facilities”.

The resource structure for the Dundas Wastewater Treatment Plant will significantly minimize risks including schedule and budget variances for the project which has project timelines that are estimated to carry through to 2033 for the design and construction of the project. In addition, there may be a requirement in the future for additional staff to operate and maintain the new processes once the equipment is commissioned roughly around 2033. Any future staffing requests will be better understood once the design commences for the Dundas Wastewater Treatment Plant capital upgrades and the level of operational and maintenance effort is assessed considering the type of new process infrastructure.

The following provides details regarding each position that is encompassed by the recommendation (b) in Report PW24059:

Senior Project Manager, Capital Delivery:

> There is currently no dedicated Senior Project Manager resource for the Dundas Wastewater Treatment Plant upgrades project. The responsibilities of the Senior Project Manager will be to provide oversight for the investigative, design, construction, commissioning, and warranty services for the overall Dundas Wastewater Treatment Plant upgrades capital project. This position will require the qualifications and experience to project manage this large capital project. The Senior Project Manager will also be responsible for the sponsorship oversight for the capital projects led by the Project Manager.

Project Manager, Capital Delivery:

> There is currently no dedicated Project Manager resource for the Dundas Wastewater Treatment Plant upgrades project. The responsibilities of the Project Manager will be to provide oversight for the investigative, design, construction, commissioning, and warranty services for the replacement of the existing sludge storage tanks, chemical system, the King Street pumping station replacement, and other active capital projects.

Finally, to execute a practical and efficient upgrade for the Dundas Wastewater Treatment Plant, additional working space for the facility is needed. It is proposed that the upgraded facility be constructed on Martino Memorial Park, which is immediately adjacent to the existing facility. Although the deed for the Martino Memorial Park lands shows 1919, the Town of Dundas formally acquired this parcel from the Lund Estate in 1949 via registration DN11430. No registered easements or encumbrances are shown in the title abstract. It is also noted from the archived document that the land began to be used as a baseball diamond in 1989 based on an agreement between the Dundas Friends of Baseball and the Department of Parks and Recreation, Town of Dundas. The information on the ownership of Martino Park is incomplete, however, all indications are that this land was secured for utility purposes. Repurposing Martino Memorial Park is key for a practical and efficient approach to a new and upgraded Dundas Wastewater Treatment Plant. This approach will provide space to construct the new facility while ensuring uninterrupted operation of the existing processes. Consequently, this approach will mitigate some construction risks, reduce overall duration, minimize project costs, and limit disruptions to the community during the construction phase. However, the City's recreation master plan indicates a lack of baseball diamond amenities City-wide and recommendation (c) in Report PW24059 directs staff to work to replace the Martino Memorial Park amenities on a new site. Staff will work to identify possible locations and bring back a report to ratify a purchase agreement if needed, along with costs for the purchase and capital costs to construct the replacement amenities and to meet any other Parks Masterplan requirements in the area if possible.

ALTERNATIVES FOR CONSIDERATION

Alternative 1:

Staff could be directed to resource the Dundas Wastewater Treatment Plant upgrades project by re-allocating existing Hamilton Water capital program staff. This alternative is not recommended because it would negatively impact progress on the existing water, wastewater and stormwater capital program resulting in increased risk of infrastructure failures, loss of water, wastewater or stormwater services, adverse public health impacts, adverse environmental impacts, and requiring expensive and unplanned emergency interventions.

Council has received several reports since 2021 that identify the poor overall condition of the City's water, wastewater and stormwater assets, and the need to increase spending across the water, wastewater, and stormwater capital program to reduce risk, support community growth and development, and improve environmental outcomes. Council has also supported this critical infrastructure deficit through increasing investments through the 2022, 2023, and 2024 Water, Wastewater and Stormwater Rate Budgets.

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The annual estimated staffing costs for the two Permanent Full-Time Equivalents estimate at $335K would be avoided.

In addition, Hamilton Water would have to analyze the eight-year water, wastewater and stormwater capital program and identify projects for deferral to free-up the necessary staff resources to support the Dundas Wastewater Treatment Plant Upgrades Project.

Staffing: The Hamilton Water Divisional complement would not increase.

Legal: Increased risk of infrastructure failure is accompanied by increased risk of regulatory non-compliance, fines, and exposes the City to significant liability.

Alternative 2:

The two Permanent Full-Time Equivalents identified in recommendation (b) could be approved temporarily, expiring at the end of the Dundas Wastewater Treatment Plant capital upgrades project. This alternative is not recommended because it adds significant risk to the capital program resulting from increased potential for staff turnover. The Dundas Wastewater Treatment Plant upgrades project represents a

$252M investment in this critical wastewater asset, with an accompanying eight-year project schedule. There is ample evidence across municipalities that capital projects and programs with higher levels of staff turnover result in projects that experience delays, increased overall project costs, and increased operational risk.

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: With the increased risk of staff turnover, project costs could exceed estimates because of delays and change orders required to respond to operational issues that would develop through the course of the capital project.

Staffing: The Hamilton Water Divisional staffing complement would increase by two full-time equivalents for the duration of the Dundas Wastewater Treatment Plant capital upgrades project, currently estimated for completion in 2033.

Legal: N/A

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PW24059 – Breakdown of Full-Time Equivalents

Appendix “B” to Report PW24059 – Correspondence from the Hamilton Harbour Remedial Action Plan Coordinator

Appendix “C” to Report PW24059 – Recommended Total Phosphorus Target for the Dundas Wastewater Treatment Plant

Appendix “D” to Report PW24059 – Dundas Wastewater Treatment Plant Upgrades – Conceptual Design Report

Appendix “E” to Report PW24059 – Facility Upgrade Plan Dundas WWTP Process Flow Diagram

Appendix “F” to Report PW24059 – Facility Upgrade Plan Dundas WWTP Process Flow Diagram – Summary of Facility Upgrade Options Technical Memorandum