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Briefing Note

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2018 Capital Budget Briefing Note Climate Change Strategies – Budget Summary

Issue:

The Budget Committee at its meeting November 10, 2017 requested that the General Manager of Toronto Water submit a briefing note to the November 28, 2017 Executive Committee meeting with a summary of the climate change mitigation strategies included in the 2018-2027 Toronto Water Capital Plan.

Background:

On July 16, 2007 City Council adopted the Climate Change, Clean Air and Sustainable Energy Action Plan (the "Climate Change Action Plan"). The central focus of the plan is the reduction of greenhouse gases released to the atmosphere by curbing the burning of fossil fuels to help fight global warming.

On July 15, 2008 City Council adopted a number of recommendations associated with the City's Climate Change Adaptation Strategy. Recommendation #2 required City divisions to incorporate climate change mitigation measures and goals for adaptation in their plans. Specifically, the City Council decision states:

2) City agencies, boards, commissions, corporations and divisions likely to be strongly affected by climate change also be requested to incorporate climate change mitigation measures and explicit goals for adaptation in their plans, programs, strategies and assessment procedures.

This City Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2008.EX22.4>

On July 8, 2014 City Council adopted the "Climate Change Risk Management Policy", which establishes the necessary processes and controls for systematically identifying, assessing and taking action to mitigate risks arising from a changing climate and defines roles and responsibilities. The City Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.PE28.6>

On December 13, 2016 City Council received the report entitled, "Resilient City – Preparing for a Changing Climate – Status Update and Next Steps". This report can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PE15.2>

On December 13, 2016 City Council directed all City Divisions, Agencies and Corporations, with support from the Chief Corporate Officer, to develop business cases as part of the 2018 Budget Process to support the implementation of the strategies outlined in the TransformTO short-term strategies.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PE15.1>

On July 4, 2017 City council adopted several goals for achieving an 80 percent reduction in greenhouse gas emissions against 1990 levels. This Climate Change mitigation strategy included the target of reducing community-wide greenhouse gas emissions by 65% by 2030 from 1990 levels as an interim target. The City Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PE15.1>

On November 10, 2017 Budget Committee recommended that the General Manager, Toronto Water, report to the Executive Committee on the November 29, 2017 with a summary of the climate change mitigation strategies included in the 2018-2027 Toronto Water Capital Plan. The Budget Committee decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.BU36.1>

The supporting document entitled, "Toronto Water 2018-2027 Capital Budget Plan Overview – Capital Budget Notes", can be found at:

<http://www.toronto.ca/legdocs/mmis/2017/bu/bgrd/backgroundfile-108707.pdf>

Key Points:

Toronto Water's recommended 2018-2027 Capital Budget and Plan includes many items that align with City Council's directions to both mitigate against and adapt to climate change. This Briefing Note provides an overview of the differences between climate change adaptation and climate change mitigation and it provides a summary of the funding allocated towards these goals over the next ten years.

Climate Change Adaptation

Climate change adaptation is defined on the City of Toronto's website as follows.

"Climate change adaptation can be defined as initiatives and measures taken to reduce the vulnerability of natural and human systems to actual or expected climate change effects. Examples of adaptive actions include raising river or coastal dikes, and substituting more temperature-shock resistant plants for sensitive ones, etc..."

Over the next ten years, Toronto Water's actions to adapt to climate change include are presented in Table 1 on the next page.

Table 1 – Toronto Water Climate Change Adaptation Actions

Type of Initiative	Initiative Details
Wet Weather Flow Management	<ul style="list-style-type: none"> • Mandatory Downspout Disconnection • Public Education • Green Infrastructure Pilot Projects • Basement Flooding Protection Program (Environmental Assessment Studies, Design, Construction, Subsidy Program, and Education) • Watercourse Erosion Management (includes studies, designs, planned construction, critical and emergency infrastructure repairs) • Funding to TRCA for watercourse erosion management
Standby Power Projects	<ul style="list-style-type: none"> • Clark Water Treatment Plant • Pumping Stations

Climate Change Mitigation

Climate Change Mitigation, as stated by The May 13, 2008 Climate Change Adaptation Strategy staff report, is defined as follows.

"Mitigation has been called 'the globally responsible thing to do.' It focuses on actions that reduce the greenhouse gas emissions that contribute to climate change"

Toronto Water's primary contributions to greenhouse gas emissions occur through our various water treatment and wastewater treatment facilities. Being very large electricity users, Toronto Water has already undertaken several initiatives aimed at reducing electricity usage. Actions to achieve further reductions through a variety of state of good repair projects or enhancements are also included in the 2018-2027 Capital Budget plan.

Over the next ten years, Toronto Water's actions that support climate change mitigation are presented in Table 2 below.

Table 2 – Toronto Water Actions That Support Climate Change Mitigation

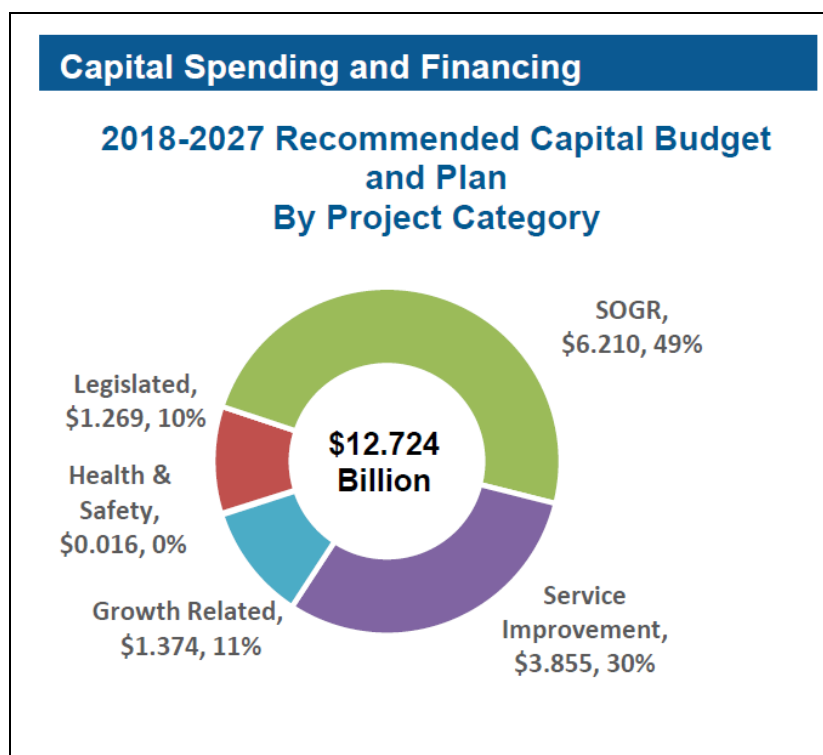
Type of Initiative	Initiative Details
HVAC Rehabilitation Projects and Upgrades	<ul style="list-style-type: none"> • Harris Water Treatment Plant • Horgan Water Treatment Plant • Island Water Treatment Plant
Energy Efficiency and Optimization	<ul style="list-style-type: none"> • Harris Water Treatment Plant – energy optimization • Horgan Water Treatment Plant – lighting upgrades • Ashbridges Bay Bio Gas Utilization
Other State of Good Repair Projects	<ul style="list-style-type: none"> • Water Treatment Storage and Pumping Stations – pump replacements, transmission operations optimizer, and

Type of Initiative	Initiative Details
	pumping station rehabilitation <ul style="list-style-type: none"> • Island Water Treatment Plant – Generator Upgrades • Ashbridges Bay Treatment Plant - Fine Bubble Aeration Upgrades • Ashbridges Bay Treatment Plant – Blower Overhaul • Highland Creek Treatment Plant – Biosolids Management Upgrades • Humber Treatment Plant – Blower Replacement • Humber Creek Treatment Plant – Upgrades to Secondary Treatment Process • Highland Creek Treatment Plant – Liquid Train Process Improvements

2018-2027 Toronto Water Capital Budget Summary

The Toronto Water 2018-2027 Capital Budget Notes has categorized the 10 year capital plan of \$12.724 billion across the categories of Health and Safety, Legislated, State of Good Repair (SOGR), Service Improvement, and Growth Related. This categorization is in accordance with the 2018-2027 Capital Budget Submission Guidelines and Instructions. Figure 1 presents an excerpt from the 2018-2027 Capital Budget Notes that corresponds with this noted categorization.

Figure 1: Toronto Water Capital Budget summary by Project Category

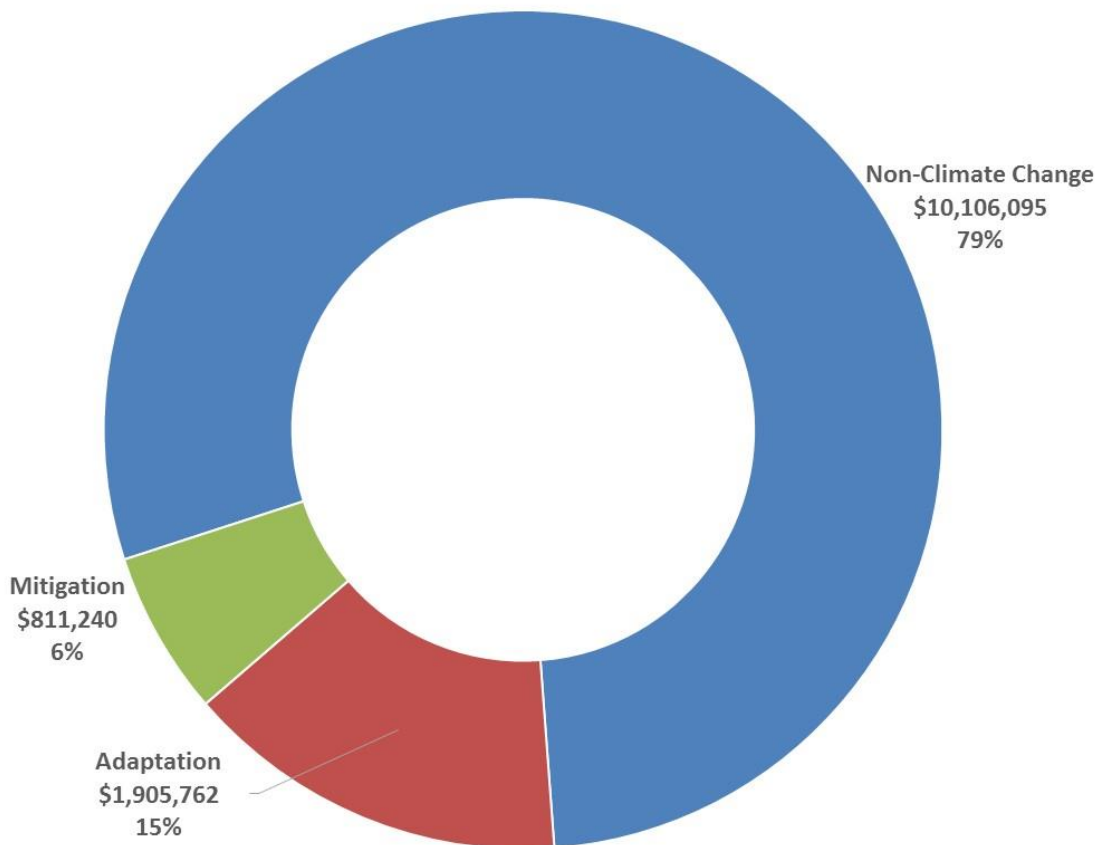


Projects presented in Toronto Water's Capital Budget and Plan can also be characterized from the perspectives of climate change adaptation and mitigation. Capital projects within the 10 year plan have been categorized as falling into one of 3 categories, namely Climate Change Adaptation, Climate Change Mitigation, and Non-Climate Change Projects.

It is difficult to determine which projects should be classified as non-climate change projects. This briefing note assumes that projects that increase system capacity for non-climate change reasons and/or that don't reduce greenhouse gas emissions are "non-climate change projects". For example, projects that enlarge infrastructure due to population growth and/or due to the modernization of design standards were considered to be non-climate change projects. A more lenient interpretation of climate change adaptation would change the information provided within this briefing note.

With Toronto Water's recommended 2018 -2027 Capital Budget and Plan, an estimated 15% of capital projects will either partially or fully contribute to increasing resilience in the face of changing climate (i.e. adaptation). Similarly, 6% of capital projects will contribute to a reduction of greenhouse gas emissions (i.e. mitigation). Figure 2 presents a graphical representation of Toronto Water's capital plan from the perspective of climate change adaptation and mitigation.

Figure 2 – Breakdown of Climate Change Projects included in the Toronto Water recommended 2018-2027 Capital Budget and Plan



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Circulated to: Executive Committee

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Date: November 21, 2017