



## **Oral Presentation**

## **Exposé oral**

### **Written submission from the Regional Municipality of Durham**

### **Mémoire de la Regional Municipality of Durham**

In the Matter of the

À l'égard de

#### **Darlington New Nuclear Project**

#### **Projet de nouvelle centrale nucléaire de Darlington**

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Application to renew the nuclear power  
reactor site preparation licence for the  
Darlington New Nuclear Project

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Demande de renouvellement du permis de  
préparation de l'emplacement d'une centrale  
nucléaire pour le projet de nouvelle centrale  
nucléaire de Darlington

#### **Commission Public Hearing**

#### **Audience publique de la Commission**

**June 10, 2021**

**10 juin 2021**



May 3, 2021

Ms. Louise Levert  
Secretariat  
Canadian Nuclear Safety Commission  
280 Slater Street,  
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Ottawa, ON K1P 5S9

**The Regional  
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**Elaine Baxter-Trahair**  
**B.M. Edu, MBA**  
Chief Administrative  
Officer

Dear Ms. Levert:

**RE: Request to Intervene**

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We understand that a virtual Public Hearing on matters related to renewing the Power Reactor Site Preparation Licence for the Darlington New Nuclear Project will be held June 9 and 10, 2021. In accordance with a resolution from Durham Regional Council passed April 28, 2021, the Region seeks to make a written intervention and an oral submission during the hearing. Please find attached our formal written submission including the resolution from Durham Regional Council. We appreciate the opportunity to participate.

Yours truly,

Original signed by

Elaine C. Baxter-Trahair  
Chief Administrative Officer

Enclosure

cc:

K. Hartwick, President and Chief Executive Officer, Ontario Power Generation  
R. Manley, Vice President, New Nuclear Development, Ontario Power Generation  
A. Foster, Mayor, Municipality of Clarington  
A. Allison, Secretary-Treasurer, Canadian Association of Nuclear Host Communities  
R. Walton, Regional Clerk/Director of Legislative Services



Submission from the Regional Municipality of Durham regarding Ontario Power Generation's application to renew the Nuclear Power Reactor Site Preparation License (PRSL) for the Darlington New Nuclear Project (DNNP)

May 3, 2021

## **Glossary of Acronyms**

CLOCA	Central Lake Ontario Conservation Authority
CNSC	Canadian Nuclear Safety Commission
DGR	Deep Geologic Repository
DNHC	Durham Nuclear Health Committee
DNNP	Darlington New Nuclear Project
DRPS	Durham Regional Police Service
EIS	Environmental Impact Statement
GHG	Greenhouse Gas
IAEA	International Atomic Energy Agency
ITER	International Thermo-nuclear Energy Reactor
JRP	Joint Review Panel
KI	Potassium Iodide
MASL	Metres above sea level
MOU	Memoranda of Understanding
MWe	Megawatts Electric
NWMO	Nuclear Waste Management Organization
OPG	Ontario Power Generation
PNERP	Provincial Nuclear Emergency Response Plan
PPS	Provincial Policy Statement
PRSL	Power Reactor Site Preparation Licence
SMR	Small Modular Reactor

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## 1 Introduction

A municipality is defined in section 1 of the *Municipal Act, 2001* as a “geographic area whose inhabitants are incorporated.” Section 2 of the *Act* provides that municipalities are created by the Province of Ontario to be responsible and accountable governments with respect to matters within their jurisdiction. There are 444 municipalities in Ontario, all of which play an important role in providing and delivering valuable programs and services to meet the needs of their residents.

The Regional Municipality of Durham (hereinafter Durham Region or the Region) is an upper tier municipality in Ontario’s system of two-tier municipal government. The upper tier is the regional level, which operates at a broader scale to provide planning, servicing and financing for Region-wide services including police, ambulance, emergency management, public health, land use planning, social services, waste management, transportation, transit services and water and wastewater services. For a more extensive list of Durham Region’s legislated responsibilities see Appendix A - Legislated Responsibilities of the Regional Municipality of Durham.

In Durham Region, eight area municipalities comprise the lower tier (see map below). The Municipality of Clarington is one of the area municipalities. They operate at a more local scale, handling services such as detailed local planning, fire protection, tax collection and parks and recreation.

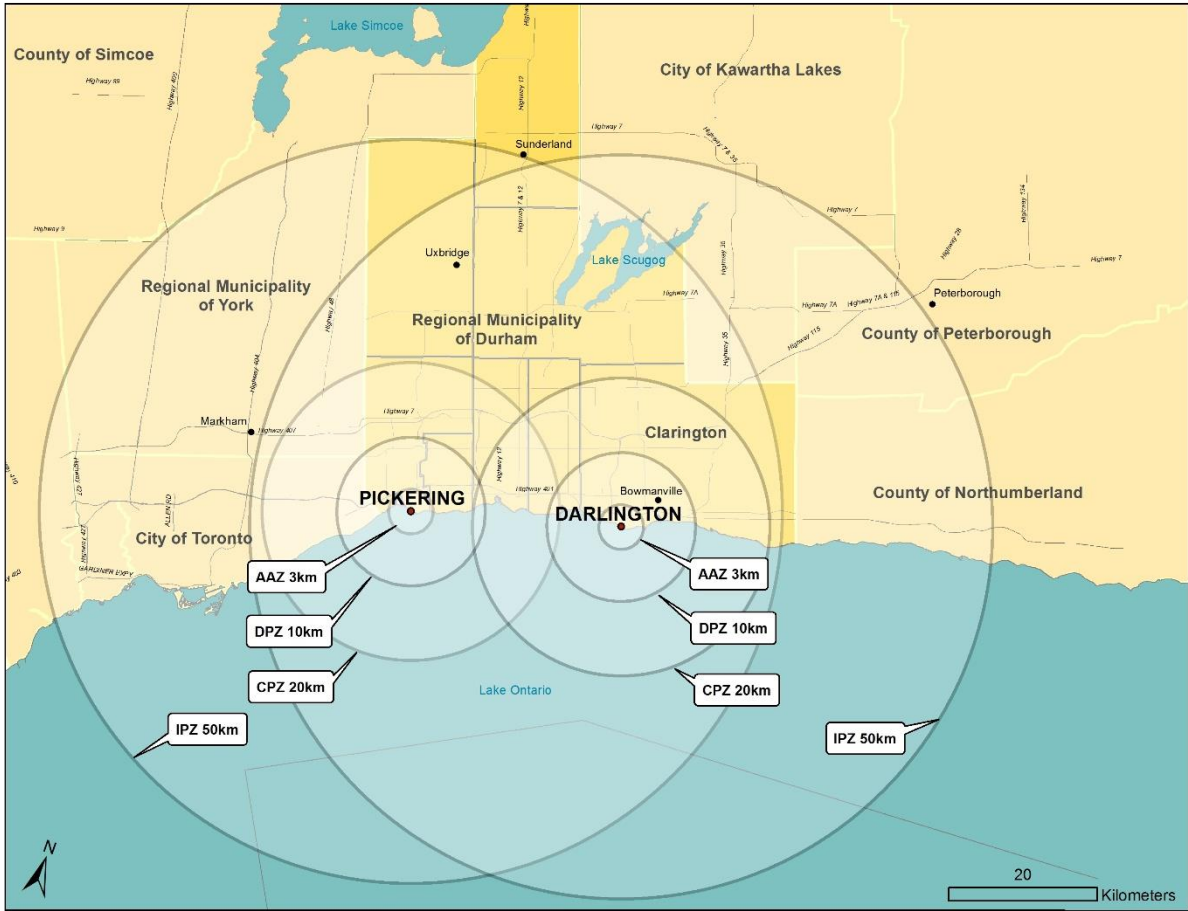


Durham Region is an experienced and informed nuclear host community. Within the Region, there are two nuclear generating stations and the Port Granby Project for the long-term storage of historic low-level radioactive waste. As the Clean Energy Capital of Canada, our business community includes a vibrant cluster of energy, environmental and engineering businesses. Since its inception in 1974, the Region has been a strong supporter of the operations at the Pickering and Darlington nuclear generating stations. This support has been expressed to the CNSC through Regional Council resolutions and Regional submissions. Regional Council has supported refurbishments at Pickering and Darlington, the ITER<sup>1</sup> Project, and re-licensing applications for the existing stations.

The following map shows the location of the Pickering and Darlington Nuclear Generating Stations and the extent of the associated nuclear planning zones within Durham and beyond.

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<sup>1</sup> International Thermo-nuclear Energy Reactor Project – in the 1990s, the site now proposed for the DNNP was the site of Canada’s bid for the ITER project. The ITER bid was won by France.





Durham Region is a leader in municipal efforts to address climate change. In January 2020, Regional Council declared a climate change emergency. To act on this direction, the Region is implementing programs to reduce greenhouse gas emissions and the impacts of climate change and to strive to be a carbon neutral community. The clean electricity supply from nuclear generation will help our community shift to low carbon energy.

Durham Region is a hub of nuclear academia, engineering and manufacturing including the Centre for Canadian Nuclear Sustainability. The Region is positioned to be the centre of excellence in Canada for nuclear generation, research and development, supply chain, deployment of innovative nuclear technology, nuclear waste minimization, decommissioning and fuel recycling. The Region endorsed Canada's SMR Action Plan statement of principles ([2020-EDT-9](#)) and has developed a chapter and local actions to help advance the sector.

The Darlington New Nuclear Project (DNNP) is aligned with the priorities of [Durham Region's Strategic Plan](#) including:

- Goal 1.1: Accelerate the adoption of green technologies and clean energy solutions through strategic partnerships and investment
- Goal 2.2: Enhance community safety and well-being
- Goal 3.4: Capitalize on Durham's strengths in key economic sectors to attract high-quality jobs
- Goal 5.1: Optimize resources and partnerships to deliver exceptional quality services and value

The Region values Ontario Power Generation's (OPG) continued dedication to community organizations, our post-secondary institutions, local procurement, and the relocation of their administrative headquarters to Clarington.

## **2 Durham Region and OPG's Strong Relationship Continues**

The Region is pleased to work in partnership with OPG on various initiatives including public awareness, emergency management, potassium iodide (KI) pill distribution and a study on community impacts and economic opportunities related to the Pickering Nuclear Generating Station decommissioning process. There is considerable effort committed to strengthening this partnership.

### **Community Engagement**

Durham Region appreciates the activities undertaken by OPG to raise awareness of the nuclear sector within the community over the years including the Neighbours Newsletter, information centres, community advisory committees and media campaigns. Durham Region and OPG have partnered for a variety of community engagement activities including emergency preparedness week events and to develop a nuclear emergency preparedness public awareness strategy.

## **Emergency Management**

For decades, the Region has played a leading role in nuclear emergency planning and has significant responsibilities under the Provincial Nuclear Emergency Response Plan (PNERP). As such, the Region has developed a high level of expertise in nuclear emergency preparedness. In 2019, Durham Region supported the International Atomic Energy Agency (IAEA) mission to review Canada's emergency preparedness and response framework for nuclear and radiological emergencies.

Durham Region works closely with OPG and local emergency services to ensure that appropriate planning, practice and coordination are in place to respond to any emergency that may affect the Durham community. OPG provides funding for this program through a Memorandum of Understanding (MOU) with the Region.

## **Potassium Iodide (KI) Pill Distribution Program**

In 2014, the CNSC strengthened the regulatory requirements for the pre-distribution of potassium iodide (KI) tablets in the Detailed Planning Zones (10 km radius). Durham Region and OPG worked in partnership to meet these new requirements and launched a campaign to distribute KI pills to over 200,000 homes and businesses.

Together with OPG and the City of Toronto, [preparetobesafe.ca](http://preparetobesafe.ca) was launched to process KI orders from anyone who lives or works in the Ingestion Planning Zone (50 km radius). Since its inception, the website has processed nearly 100,000 orders (as of December 2020).

The KI distribution program includes collecting tablets nearing expiration and redistributing new tablets, developing and disseminating KI educational materials and raising awareness within the community about the availability of KI. OPG provides funding for this program through an MOU.

## **Durham Nuclear Health Committee**

OPG provides funding and technical assistance to the [Durham Nuclear Health Committee \(DNHC\)](#). DNHC is a committee of Durham Regional Council that is chaired by the Region's Commissioner & Medical Officer of Health. The DNHC is a forum for discussing and addressing potential radiation and environmental human health impacts. Membership of the DNHC consists of nine public members from Whitby, Oshawa, Ajax, Clarington and Pickering, who are appointed by Council; two representatives of OPG; and four provincial/regional government representatives. OPG staff regularly provide educational presentations and updates on environmental monitoring.

## **Policing**

The Durham Region Police Service (DRPS) has an excellent working relationship with both the Emergency Preparedness and Security program and the Emergency Services

(SES) Unit within OPG. To maintain a strong working relationship, DRPS participates in security and emergency services training and exercise activities in OPG's Emergency Management Program. This includes natural, technological and human-induced (criminal) emergencies or disasters. DRPS also participates in annual "Force on Force" security exercises and training opportunities in the roles of participant, observer and evaluator.

In 2017, OPG opted to join the Region's Next/Gen radio system used by responders across Durham region. This system ensures integrated, seamless and interoperable communications among responders. It is an excellent example of a valuable partnership between the Region and OPG. The DRPS and OPG have an MOU for Off-Site Response that provides the framework for police response.

### **Study of the Financial, Economic, and Social Impacts of the Retirement of the Pickering Nuclear Generating Station**

The City of Pickering, Durham Region and OPG are studying community and economic impacts and opportunities related to the decommissioning process at the Pickering Nuclear Generating Station. Through this partnership, the Region will work with the City of Pickering and the Centre for Canadian Nuclear Sustainability to stimulate research, technology development, and innovation related to the decommissioning process, while also attracting industry and talent.

### **3 Durham Region's detailed comments on the DNNP PRSL**

The Region submitted comments to the Joint Review Panel in 2011 related to the environmental, human health, and Regional impacts of the original proposed DNNP ([2011-J-29](#); [2010-J-29](#)). The Region understands that at this time OPG is not considering a 4,800 MWe reactor facility as was originally proposed for the DNNP. The smaller SMR development (300-400 MWe) now proposed is expected to have a reduced footprint. However, our comments are based on the contents of the PRSL application. Once a technology partner for the DNNP has been selected, Durham Region looks forward to continuing its strong partnership with OPG to understand how we can work together to facilitate the project, minimize impacts and maximize benefits to the community.

The Region's submission will provide general comments and specifically address the following sections of OPG's PRSL renewal application within the mandate of the CNSC:

- 3.2 Environmental Risk Assessment
- 4.4 Site Characteristics
- 4.5 Evaluation of Natural External Events
- 5.5 Physical Design
- 5.7 Radiation Protection of OPG's renewal application

The comments below were approved by Regional Council on April 28, 2021 ([2021-COW-8](#)).

### **3.1 General Comments**

- The Region supports the selection of the Darlington site as the first on-grid SMR application in Canada and supports the DNNP.

### **3.2 Comments on section 3.2 Environmental Risk Assessment**

- OPG should be required to develop plans to forecast, mitigate and monitor the impacts of dust, air and noise emissions from site preparation activities on neighbouring residents as a requirement of the PRSL.

### **3.3 Comments on section 4.4 Site Characteristics**

- The application includes the potential for infilling in Lake Ontario. The Region has concerns that lake infilling may alter the near shore currents, resulting in impacts to the water quality at the water supply plants. OPG should avoid lake infilling if possible due to the effects it will have on shoreline facilities, biota, and natural processes. If unavoidable, silt erosion and control mitigation must be in place to ensure that the nearby water treatment plant intakes are not impacted. OPG should investigate potential impacts to ensure the operation of Regional infrastructure is not negatively impacted.
- Unique to Ontario, Conservation Authorities are local watershed management agencies that deliver services and programs to protect and manage impacts on water and other natural resources in partnership with all levels of government, landowners and many other organizations. Conservation Authorities promote an integrated watershed management approach balancing human, environmental and economic needs. The Darlington Nuclear Generating Station and DNNP are within the Central Lake Ontario Conservation Authority's (CLOCA) jurisdiction. OPG should ensure that any biological or environmental impacts related to the development of the site or lake filling are discussed with CLOCA.
- The Region has conducted extensive analysis of cancer and congenital anomaly data for areas around the Pickering Nuclear Generating Station and Darlington Nuclear Generating Station, resulting in "Radiation and Health" reports. The 2007 report concluded that disease rates in Ajax-Pickering and Clarington did not indicate a pattern to suggest that the Pickering and Darlington nuclear generating stations were causing health effects in the population. More recently, population health assessments have focused on analysis by [Health Neighbourhood](#) and a broad range of [health data](#). This information helps to understand the health status of Durham Region residents and can be used by OPG in the context of human health risk assessments.

- The Land Use Report prepared for the Site Preparation Licence Renewal Activity Report was prepared in 2019. Since this report was finalized there has been an update to the [Provincial Policy Statement](#) (2020) (PPS), which guides planning decisions in the province. These changes should be reflected in the application. Specifically, section 1.2.6.2 of the PPS provides an update on Land Use Compatibility and smaller technical changes related to energy generation have been made throughout. These should be noted, and the Land Use Report should be updated.
- Changes should be made to recommendations number 43 and 44 in Table 12: Status of Government of Canada Recommendations Applicable to the Site Preparation Phase to reflect that the Provincial Policy Statement is the appropriate planning document, not the Public Policy Statement.
- The Region has engaged in a review of the Durham Regional Official Plan. This review has been identified in the Land Use Report provided in support of the application. [Envision Durham](#) has proposed changes to policies related to the Darlington site and energy generation in the Region. In the time since the Land Use Report was finalized, the Region released [Proposed Policy Directions](#). Specifically, Envision Durham is considering extending the Urban Boundary to include the Darlington Site. The Durham Regional Official Plan would recognize the Automatic Action Zone by including policies that:
  - Restrict sensitive land uses within the Automatic Action Zone; and/or
  - Outline how the impacts of these facilities will be considered through the review of development applications.

The Region has proposed policy directions related to the Darlington Site and it is recommended that OPG review these and provide feedback, preferably by June 30, 2021, as detailed in the policy directions report.

### 3.4 Comments on section 4.5 Evaluation of Natural External Events

- The Region, through the Ontario Climate Consortium, recently undertook a climate modelling exercise to update the current climate projections to include both Global and Regional Climate Models through an ensemble approach. The report, titled "[Guide to Conducting a Climate Change Analysis at the Local Scale: Lessons Learned from Durham Region](#)", should be used to inform future updates to climate change assessments undertaken as part of the DNNP PRSL. The report includes climate projections that will provide guidance on the future conditions that the site will need to accommodate. This is relevant in terms of adapting to changes in drainage, groundwater flow, the effort needed to maintain species diversity onsite, impacts of invasive species and shoreline impacts.
- Water levels across the Great Lakes are primarily the result of natural, uncontrolled water supplies into the basin. Lake Ontario experienced a record-

high water level in 2017 of 75.88 meters or 248.95 feet. It then exceeded that just two years later in 2019, with a new record of 75.92 meters or 249.09 feet. These water levels resulted in damages and other impacts across the system including shoreline properties in Clarington. OPG should undertake a flood hazard assessment for future high water levels of Lake Ontario to ensure that site preparation, flood protection and erosion control measures are sufficient. OPG should ensure shoreline flooding is addressed with CLOCA.

- Impacts of algae on cooling water intakes should be considered during technology selection and design.

### **3.5 Comments on section 5.5 Physical Design**

- Since the PRSL was approved in 2012, transportation infrastructure and demand in the area have changed. Updated impact assessments for site preparation, construction and operation of the revised DNNP should be provided for the Region's review at the earliest opportunity to allow for advance planning.
- Excavation and grading are major components of site preparation. These activities may generate large volumes of truck traffic for removing surplus soil from the site and/or importing fill and aggregates to the site. Before initiating site preparation activities, OPG should identify haul routes, expected truck volumes and schedules, and prepare a traffic management plan that addresses impacts on safety, dust, traffic operations, and pavements along the haul routes. OPG should comply with O.Reg. 406/19 made under the Environmental Protection Act and with applicable local municipal site alteration/fill by-laws for the export and import of fill.
- Several key transportation infrastructure improvements have been completed in the area of the DNNP that will benefit site preparation, construction, and operation of the site. The Region has additional road improvements planned in the next two to three years. Subject to the outcome of an updated transportation impact assessment of the DNNP, OPG should commit to funding any additional improvements necessary to ensure that transportation infrastructure required for the DNNP is in place before the commencement of major works on the site. This will help avoid having key access routes under construction while the DNNP is in progress. This could include road network upgrades such as pavement strengthening, widening and intersection modifications.
- OPG should provide their existing and proposed water usage and sanitary sewer discharge quantity and quality calculations for the DNNP to the Region to allow for long term servicing planning.

### **3.6 Comments on section 5.7 Radiation Protection**

- If changes to the nuclear planning zones are anticipated, OPG should consult with the Region to update the KI distribution program.

## **4 Conclusion**

Durham Region is pleased to be at the forefront of SMR deployment in Canada. As an experienced nuclear host community, Durham Region understands the potential benefits of SMR technology and the opportunities this technology brings to Canada.

## Appendix A - Legislated Responsibilities of the Regional Municipality of Durham

The following chart lists key pieces of applicable legislation for Durham Region but is not an exhaustive list.

<b>Regional Responsibility:</b>	<b>Legislation:</b>
Borrowing of Money for Capital Expenditures of Upper and Lower Tier Municipalities	Municipal Act, 2001.
Community and Land Use Planning including: the Regional Official Plan and implementation thereof; approval authority function for lower-tier municipal official plans and amendments thereto; industrial, commercial and residential development approvals; Land Division consent applications; administration of development charges; strategic land use planning; plan of subdivision and condominium approvals; and site plan application commenting function.	Planning Act; Greenbelt Act, 2005; Oak Ridges Moraine Conservation Act, 2001; Oak Ridges Moraine Protection Act, 2001; Lake Simcoe Protection Act, 2008; Places to Grow Act, 2005; Development Charges Act, 1997; Environmental Protection Act.
Economic Development and Tourism	Municipal Act, 2001
Emergency Management including detailed arrangements and procedures for implementing precautionary and protective measures; detailed planning for public alerting system requirements, public education program, and provision of emergency communications; arrangements to receive and accommodate evacuees; carry out the required response as prescribed by the province; conduct training and exercises to prepare Regional staff; ensure availability of essential facilities, emergency centres, resources and equipment required by the Region to respond.	Emergency Management and Civil Protection Act, Provincial Nuclear Emergency Response Plan, 2017.
Emergency Services including: 9-1-1 management; land ambulance services and police services.	Municipal Act, 2001; Ambulance Act; Police Services Act; Development Charges Act, 1997.
Policing	Several acts recently amended by the Safer Ontario Act 2018 including for example the Police Services Act.



<b>Regional Responsibility:</b>	<b>Legislation:</b>
Property taxes.	Municipal Act, 2001; Assessment Act; Electricity Act, 1998.
Provincial Offences Court including prosecution services, court administration and collection of fines.	Provincial Offences Act.
Public Health programs, services and Paramedic Services.	Health Protection and Promotion Act, the Ambulance Act, and numerous other acts and regulations which reference public health.
Regional roads, bridges and traffic signals.	Municipal Act, 2001; Planning Act; Highway Traffic Act; Development Charges Act, 1997.
Social Services including arrangements to receive and accommodate evacuees, child care centres, nursery school programs, Durham Behaviour Management Services (children), family counselling, long-term care and services for seniors, Ontario Works, and social housing.	Municipal Act, 2001; Day Nurseries Act; Child and Family Services Act; Ontario Works Act, 1997; Ontario Disability Support Program Act, 1997; Family Benefits Act; Social Housing Reform Act, 2000; Occupiers Liability Act.
Solid Waste Management including diversion, recycling, compostables, yard waste, white goods and bulk items.	Development Charges Act, 1997; Municipal Act, 2001; Resource Recovery and Circular Economy Act, 2016, Waste Diversion Transition Act, 2016, Environmental Protection Act.
Transit and specialized transit services.	Municipal Act, 2001; Accessibility for Ontarians with Disabilities Act, 2005.
Water infrastructure and services: drinking water supply, treatment, distribution and billing.	Development Charges Act, 1997; Municipal Act, 2001; Ontario Water Resources Act; Safe Drinking Water Act, 2002; and Clean Water Act, 2006.
Wastewater infrastructure and services sewage collection, treatment and billing.	Development Charges Act, 1997; Municipal Act, 2001; Ontario Water Resources Act.
By-law enforcement.	Numerous Acts and Regional By-laws.

References to Acts include references to applicable Regulations and Plans.

Additionally, the Region has numerous agreements with public-sector partners that may govern the activities noted above, in addition to Council-adopted policies and initiatives that may be applicable, including:

- a. Durham Region Strategic Plan 2020-2024
- b. Durham Region Official Plan
- c. Transportation Master Plan 2018
- d. Long Term Transit Strategy 2015
- e. Long Term Waste Management Strategy 2021 - 2040
- f. 2021 Regional Business Plans and Budgets
- g. 2019 Asset Management Plan and 2020 Corporate Asset Management Update Report
- h. Annual Accessibility Plan (covers all regional services per Ontarians with Disabilities Act, 2001)
- i. Durham Regional Police Strategic Business Plan (3-year plan)
- j. From Vision to Action, Region of Durham Community Climate Change Local Action Plan, 2012
- k. Towards Resilience: Region of Durham Community Climate Adaptation Plan 2016
- l. Durham Community Energy Plan 2018

While this list is not exhaustive, it does include the key documents that lay out the framework for the Region's infrastructure and relevant services.