SECTION

4

Attachment 1: Section 4-9

Artistic rendering of the Ship Channel

4.9
INNOVATION AND SUSTAINABILITY

The Port Lands is envisioned to be a globally-significant, sustainable and resilient new Toronto city district. It will embody the cultural and technological shifts necessary to assist in keeping the global average temperature rise to below two degrees. The Port Lands will be poised to showcase the latest innovations and utilize progressive approaches to preserve and enhance natural ecosystems, conserve resources, minimize environmental impacts, reduce waste, build wisely, and both respond to and mitigate a changing climate.

The City of Toronto has set an ambitious goal to reduce greenhouse gas (GHG) emission by 80% by 2050 to help reduce the negative impacts of climate change. The transformation of the Port Lands provides an opportunity to create a sustainable city district with a low carbon footprint to assist in meeting the City's GHG reduction targets. Additionally, it can ensure social and economic diversity and the health and well-being of people and wildlife.

Sustainability is embedded throughout this Framework. The new mixed use communities will provide opportunities to grow the city's affordable housing stock and access daily needs without requiring a car. Maintaining the working port enables the city to receive the goods needed to build and maintain the city with the least amount of environmental impact. Fostering and growing key employment sectors, such as the film, television and digital media sector and green industries, supports the creation of well-paid jobs for Torontonians and grows our economy.

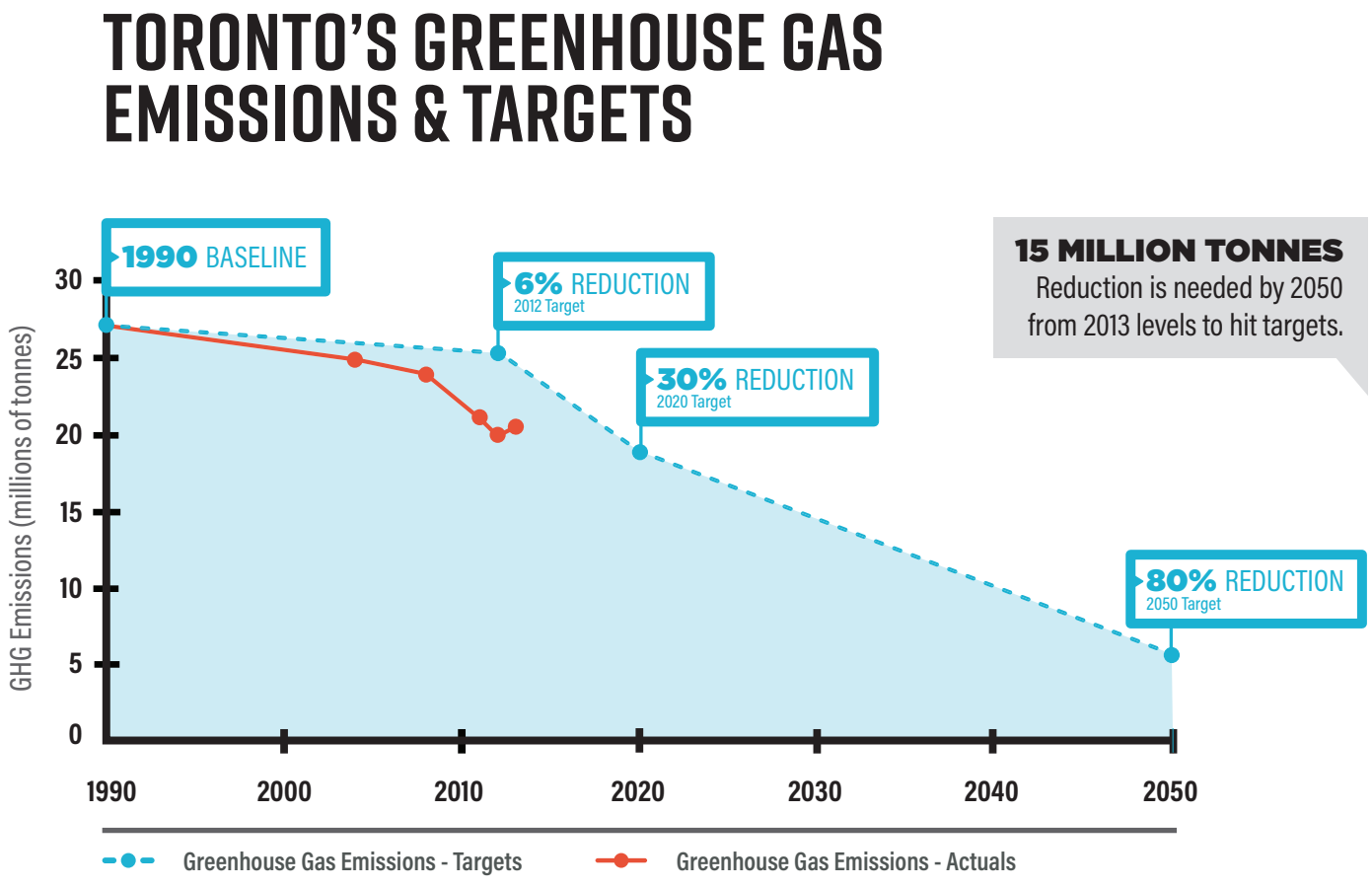
Sustainable transportation solutions are also being spearheaded. The natural choice for people will be to walk, cycle or use public transit rather than travel by car. These directions, among others, taken together with advancing the sustainability approach outlined in this section, will optimize the use of land, minimize the impacts of development and showcase the area as a place for environmental and social innovation. All of which will champion a better environment for the city and region.

The Port Lands Sustainability Approach

The approach for creating a sustainable and resilient city district in the Port Lands is to implement progressive solutions from the start. At the same time, the approach will ensure flexibility given the continual advancements made in technology and in minimizing our ecological footprint. The approach builds on the Central Waterfront Secondary Plan's (CWSP) principle of promoting a clean and green environment.

The benchmarks and strategies proposed in this Framework exceed the City's and Waterfront Toronto's current mandated practices. They will assist Toronto in achieving the City's aggressive targets for GHG reduction and tackle key environmental issues. The benchmarks and strategies are based on emerging best practices, and proven technologies and approaches for advancing a progressive sustainability agenda.

Figure 71: Toronto's Greenhouse Gas Emissions and Targets



The approach is tailored specifically for the Port Lands and is holistic in nature. Significant research and analysis was undertaken to arrive at this approach:

- A Port Lands wide Community Energy Plan was developed which involved completing an energy profile of the recommended Land Use Direction, and enabled the identification of key issues and opportunities needed to achieve sustainable energy practices.

- Emerging best practices and precedent research was undertaken for the broader city as part of the **Transform T.O** and **Getting to Zero Emission Buildings** initiatives, but also as part of the development of this Framework.

- The natural environment has been extensively studied in this area dating back to the Task Force to Bring Back the Don (1991), and with more recent work on the Don Mouth Naturalization and Port Lands Flood Protection Project and city-wide study of Environmentally Significant Areas.

- A sustainability audit was also undertaken for Villiers Island which explored strategies for the Island to achieve an outcome that reduces carbon output to below zero, also referred to as climate positive.

COP 21 & The Paris Agreement

On December 12, 2015, a monumental climate agreement was entered into in Paris, France at the United Nation Framework Convention on Climate Change (UNFCCC) 21st Meeting of the Conference of the Parties (COP21) by over 190 international governments, including Canada. The Paris Agreement is a legally binding international agreement that aims to limit long-term global temperature rise to below 2 degrees Celsius above pre-industrial levels (UNFCCC, 2015). The Paris Agreement was ratified at the UN on April 22, 2016 by 175 nations, which demonstrates a near-global consensus on the urgent need to transition to a low-carbon economy (Pembina Institute, 2016). Canada committed to a national GHG reduction goal of 30% below 2005 levels by 2030.

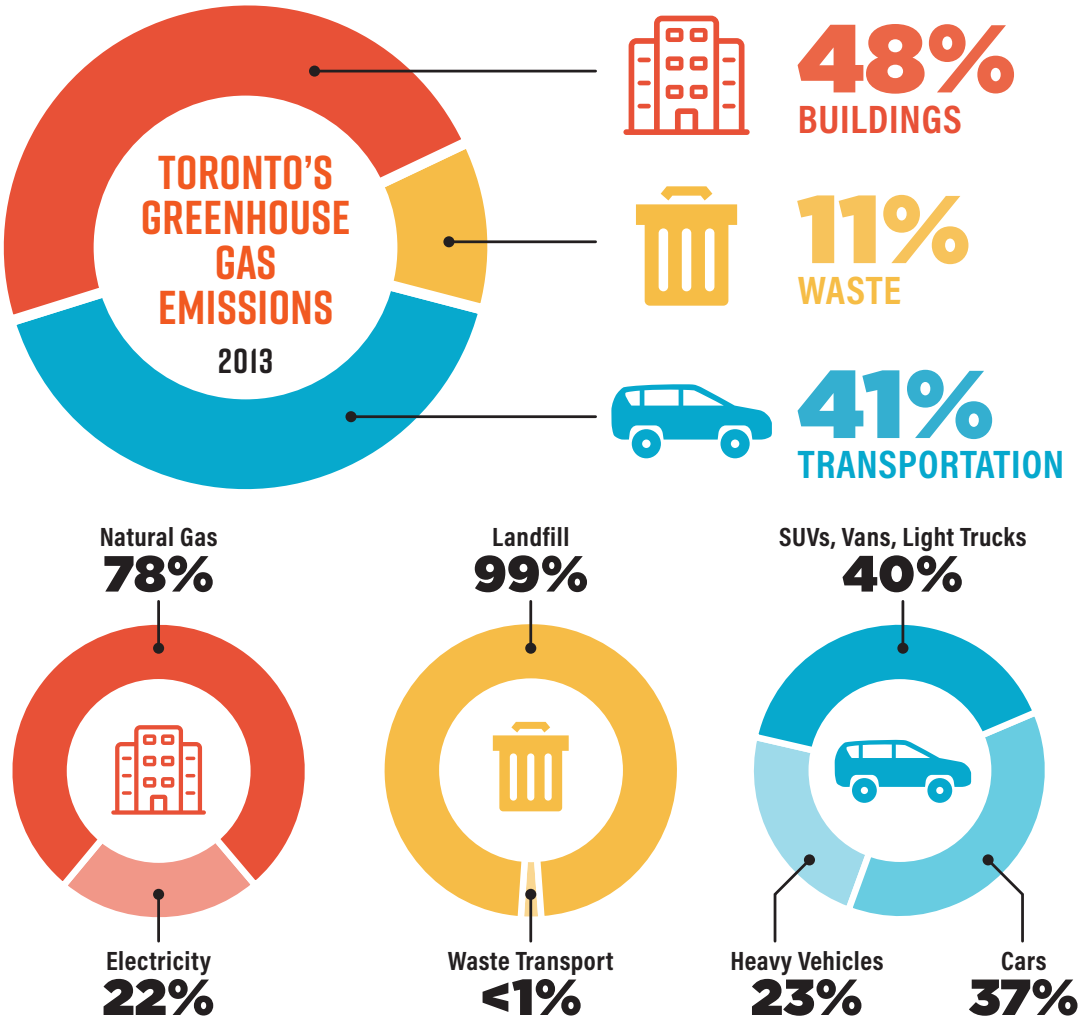


Figure 72:
Toronto's GHG Emissions and Breakdown

C40 Climate Positive Development Program

The C40 Climate Positive Development Program showcases how cities can grow in ways that are 'climate positive'. Climate Positive projects commit to maximizing efficiency on-site and further reducing emissions in the surrounding areas. Greenhouse gas emissions from energy use, waste and transportation sources are minimized and accounted for in projects, while at the same time implementing local offsets such as the preservation, creation and regeneration of parks and green spaces (carbon sinks) and exporting clean energy. The result is a net reduction of carbon emissions to below zero. The Lower Don Lands, including both Keating Channel and Villiers Island Precincts, was selected as one of seventeen inaugural projects of the program.

4.9.1 Creating a Net Zero Energy District

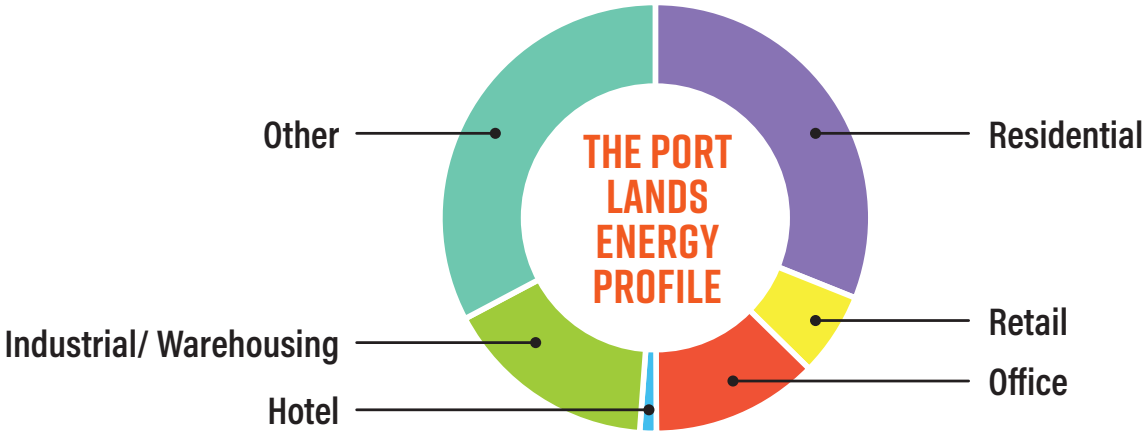
Revitalizing the Port Lands as a net zero energy district will contribute to both the global climate change challenge as well as the City's ambitious GHG reduction target. Further, the Lower Don Lands (which includes both the Keating Channel and Villiers Island Precincts) continues to be identified by Waterfront Toronto as a participant in the C40 Climate Positive Development Program.

Traditional energy production and consumption is a significant contributor to climate change and poor air quality. In Toronto, the primary contributors to greenhouse gas emissions originate from buildings, transportation sources, and waste (Figure 72). The Port Lands Energy Plan assessed the energy profile (Figure 73) for the different uses proposed and current minimum building requirements. At full build-out, it's anticipated that buildings in the Port Lands will add approximately 550 Megawatt hours (eMWh) of energy demand, resulting in an increase of 88,000 tonnes of CO2.

While the City's current Toronto Green Standard and Waterfront Toronto's Minimum Green Building Requirements have made substantial advances in reducing energy use in buildings and improving the sustainability performance of development sites, more aggressive and innovative approaches are needed to achieve a net zero energy district.

A net zero energy district is a place where no more energy is consumed than is supplied by non-fossil fuel sources. It can be achieved at the building scale through passive design. At the district scale, it can be achieved by reducing carbon emissions associated with transportation and waste, and implementing community-based energy systems such as low carbon district energy and combined heat and power facilities.

Figure 73: The Port Lands Energy Profile



Designing Passively

Buildings with low energy needs are critical to transforming the Port Lands into a net zero energy district. Designing passively is gaining momentum as the optimal way to create buildings with low energy demand while maintaining high levels of personal comfort. It can also be a cost-effective way to reduce mechanical energy demand, resulting in less need for power production (Figure 74).

Passive design can be applied to any building typology and is being used as the basis for building standards in many Canadian and European cities such as Vancouver, Luxembourg, Oslo and Cologne. It means:

- Providing an efficient building shape, location and orientation to leverage solar gain, minimize heating loads and improve daylighting. This often involves orienting buildings to within 30 degrees of true north, but also simple building forms to reduce the potential for heat loss;

- Incorporating shading strategies or design features on west and south facades and proper window sizing and placement to enable solar gains in the winter while minimizing the potential for overheating in the summer to reduce cooling loads and pressure on the grid during periods of high demand for cooling;

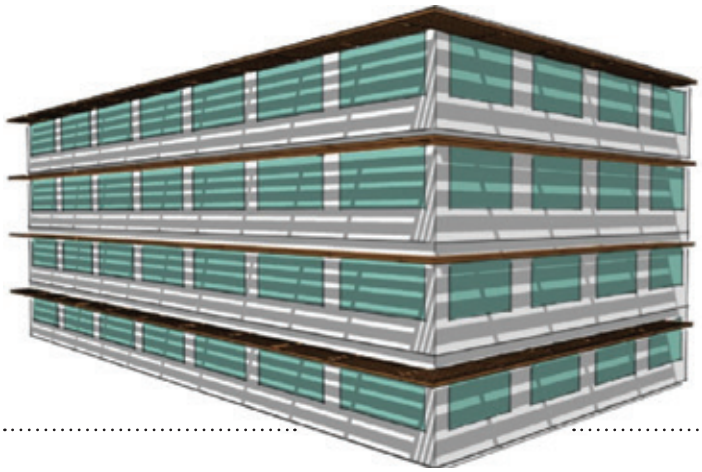
- Utilizing building materials with high capacity to absorb heat and slow release, coupled with high levels of insulation for better thermal mass performance and minimization of heat loss;

- Employing advanced windows (triple glazing) to minimize heat loss. This is especially important as windows are the thermally weakest part of a building envelope;

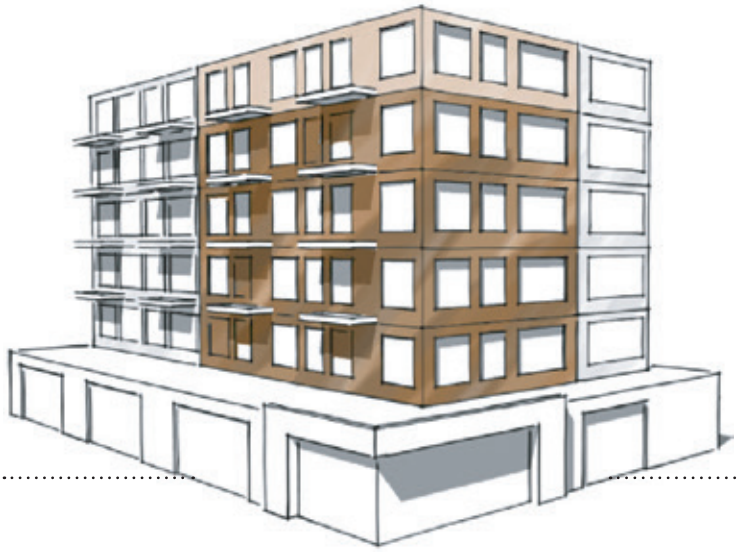
- Ensuring high levels of airtightness to minimize heat loss from air infiltration. This prevents inward leakage of outdoor air through cracks or openings in the building; and

- Constructing free of thermal bridges to minimize impacts to energy performance. For instance, balconies are typically constructed by extending the concrete floor slab. The concrete transmits energy between the interior space and outside space. In cold temperatures, this thermal bridge can cause colder floors near the building perimeter and can impact energy performance by requiring more energy for heating. Several alternatives to concrete balcony slabs exist.

Implementing these passive design measures can contribute to significantly lowering annual heating and cooling demand, while also showcasing Toronto's leadership in climate change mitigation. Additionally, consideration to plug loads and ensuring high efficiency appliances can lower primary energy consumption and likewise result in energy savings and reductions in GHG emissions.



Shading devices installed over windows on south and west facades help to minimize solar gains in the summer months



Simple, compact forms for buildings help to minimize thermal bridging through the building envelope.

Figure 74: Community Energy Planning Framework

MINIMIZED BUILDING LOADS				EFFICIENT BUILDING OPERATIONS		POWER PRODUCTION
Context	Urban Structure	Urban Morphology	Building Typology	Optimized Operations & Appliances	Occupant Behaviour	Renewable Energy
Climate Topography	Configuration Mobility Density	Massing Public space Streetscape	Building type Architecture	HVAC Lighting Hot water Appliances	Lights Room temperature Plug loads Water use	Type Proximity

INCREASING COSTS →

Source: Villiers Island Sustainability Audit

Generating Energy

Even with passively designed buildings, there will continue to be a need for energy, but at a significantly reduced rate. The majority of the power generated in Toronto today utilizes natural gas which is a significant greenhouse gas contributor. Renewable energy generation and distribution, at both the building- and district-scales, will play an important role in attaining net zero energy. These would also provide a more reliable source of energy, ensuring people can continue to be comfortable during periods of extreme weather or power failures.

Building-scale renewable energy can include solar panels, more efficient heat recovery systems, biogas systems or the application of bird-sensitive micro-wind turbines. Emerging technologies, such as photovoltaic material to replace conventional building materials, could also be employed. District-scale renewable energy generation can be provided by way of district heating and cooling facilities or combined heat and power (CHP) facilities. District heating and cooling facilities consist of a network of pipes connecting multiple buildings to one or more thermal energy sources. Numerous renewable thermal energy sources such as waste heat recovery (from industrial uses or wastewater mainlines), deep lake water cooling, solar thermal energy, and geo-exchange can be utilized.

CHP facilities provide both thermal energy and electrical power. There are two potential options for CHP. The first is contracting with the Independent System Operator, the crown corporation responsible for operating the electricity system in Ontario, with the power generated exported to the broader grid. The second is to establish a micro-grid, consented to by the Independent System Operator, to generate and distribute power to the different districts. A micro-grid is a small scale power grid that can operate independent of the main grid.

Additional studies will need to be conducted to confirm the optimal district energy system for the Port Lands, as well as to determine the ideal location(s), scale, size and renewable power source of any systems. A Port Lands-wide feasibility study will be undertaken to identify the optimal approach.

A green roof and solar panel combination with amenity space

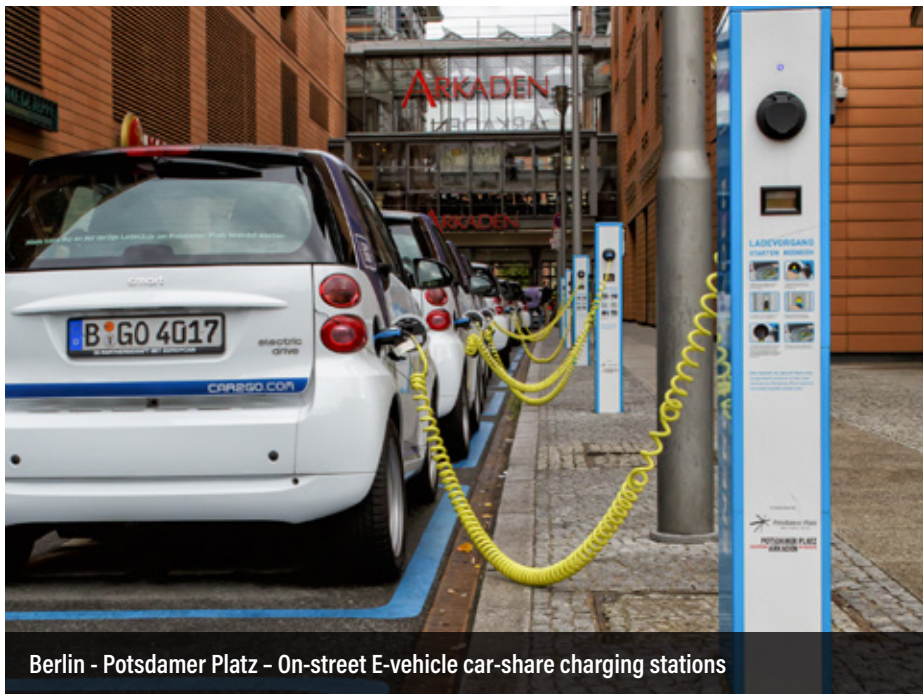
4.9.2 Facilitating Better Mobility and Access

A sustainable transportation agenda is being advanced for the Port Lands that is centred on better mobility and access. The preferred transportation network is linked directly to providing a connected transportation system that allows residents, employees and visitors to get to and from their desired destinations quickly, easily, and sustainably. Whether someone's objective is to grab a cup of coffee, pick up a few groceries, or to see a show downtown, choices need to be provided for how people will move in and out of the Port Lands.

Additionally, port operations within the Port Lands provide the added benefit of maintaining marine goods movement. Boat traffic does not contribute to road congestion and marine shipping is 600 per cent more efficient than shipping by truck, resulting in fewer greenhouse gas emissions per tonne/kilometer (Research and Traffic Group, 2013).

While a robust and resilient transportation network is critical to advancing a sustainable city building agenda, better mobility and access also requires:

- Designing active transportation routes and infrastructure to be safe, convenient and attractive, which will also contribute to the health and well-being of people, both physically and mentally;
- Providing suitable end-of-trip facilities, such as bicycle parking (on-street and secured in buildings), showers and lockers, in prominent and accessible locations;
- Encouraging zero-emission vehicles and other emerging technologies to reduce local air pollution and contribute to achieving local greenhouse gas reduction goals;
- Encouraging the provision of car share parking, bike share infrastructure and the inclusion of electric vehicles (EV) infrastructure, powered by renewable sources, in developments to reduce the number of vehicles in the Port Lands that rely on fossil fuels; and
- Conveniently locating public electric vehicle charging stations, where technically feasible.



Berlin - Potsdamer Platz – On-street E-vehicle car-share charging stations

4.9.3 Sustaining and Enhancing Ecological Integrity

Ecological integrity is about ensuring that as the Port Lands revitalizes and redevelops, the natural environment is sustained and enhanced. This applies not just to the rich natural environment that exists today, or that is planned, within the Port Lands itself, but also to ensuring that impacts to the broader environment are minimized. Development puts pressure on the natural environment, contributes to waste generation and consumes materials. Wisely using and managing resources is key to sustaining ecological integrity and urban life. The approach in the Port Lands recognizes that our collective actions are critical to maintaining human and ecological health. It embraces acting responsibly when dealing with soil, water, waste, materials and the natural environment.

In the short term, wisely using resources will provide economic as well as environmental benefits. For instance, a compact urban form for development promotes the judicious use of land and resources. In the longer-term, new opportunities and approaches may emerge to further reduce the overall ecological footprint of development. These should be embraced, with new innovations implemented with each new development in the Port Lands.

The Natural Environment

The Port Lands and surrounding area is well known for its city-wide and regionally significant natural features, including forests, meadows, wetlands and other habitats associated with Lake Ontario. These natural features provide natural function, habitat for flora, fauna and aquatic species, natural beauty, educational opportunities, and passive recreation. These natural features and habitats are not to be considered in isolation, but as integral components of a system that extends beyond the Port Lands. The Don River valley system, which currently terminates at the Port Lands, is one of the backbones of the city's ecological network and broader greenbelt system. Additional opportunities for naturalizing the Port Lands in an urban context are identified in more detail in the Section 4.10 Biodiversity.

Soil

Much of the land in the Port Lands is contaminated as a result of the fill used to create the Port Lands and historic industrial, port and petrochemical uses. Transforming the Port Lands will require containment, removal and/or treatment of contaminated materials. The

volume of soil to be remediated is considerable. For the naturalization of the mouth of the Don River alone, it's estimated that up to 2.3 million cubic metres of contaminated soil will need to be remediated. Further, the implementation of risk management measures and/or remediation will be necessary for the Port Lands streets, and for new parks, open spaces and buildings.

Treated soils, where feasible, will be reused for regrading and other activities that need to occur. Waterfront Toronto, in collaboration with the City of Toronto and the Toronto and Region Conservation Authority, is exploring international best practices for soil remediation and reuse that are applicable to the Port Lands context and will meet provincial guidelines and regulations.

Water

The transformation of the Port Lands not only offers a significant opportunity to upgrade, replace and introduce new water and waste water infrastructure, but also the ability to implement best practices related to reducing potable water demand and capitalizing on rainwater. The best practices, in turn, will contribute to reducing energy consumption and greenhouse gas emissions associated with the pumping and treatment of wastewater and stormwater.

Potable Water Demand

Reducing potable water demand can be achieved at the building scale by encouraging high efficiency fixtures and appliances, applying water reuse strategies, and using non-potable water sources for irrigation, toilets, and potentially as a fire-fighting supplement subject to meeting public health requirements and the Building Code. Further opportunities to reduce water demand will be explored during site and building design.

Rainwater

Rainwater is a resource that should be valued from both a human and ecological perspective, not simply relegated to a system of pipes in the ground to be discharged into Lake Ontario. An integrated stormwater management solution that celebrates water as a resource has been advanced through the Port Lands and South of Eastern Transportation and Servicing Master Plan (TSMP) and Lower Don Lands Class EA that embraces rainwater as a valuable resource.

At a site level, the City's Wet Weather Flow Management Guidelines will continue to be the guiding document to manage stormwater flows. However, managing on-site rainwater using low-impact development techniques will be utilized, as well as encouraging more aggressive minimum on-site runoff retention in recognition of the potential for shorter, more intense weather events.

Waste

The City's Long Term Waste Management Strategy (Waste Strategy), completed in 2016, provides a framework for waste reduction, reuse, recycling, recovery and residual disposal (the 5Rs) for the City, and identifies cost-effective, socially acceptable and environmentally sustainable policies and programs for managing waste over the long term. The strategy also established an aspirational goal of working towards zero waste. Zero waste places an emphasis on preventing waste (e.g. reducing packaging), rather than simply managing it. It also involves a paradigm shift in how waste is viewed, where emphasis is placed on recovering valuable resources from waste, rather than just disposing of it.

Waste management within the new communities and employment clusters in the Port Lands will be in accordance with the City's Waste Strategy policies and programs, which will periodically be reviewed and updated by the City, including the aspirational goal of achieving zero waste. Additionally, consideration will also be given to how waste can be reduced and managed during all stages of development in the Port Lands, and in support of the goal of zero waste.

WASTE MANAGEMENT HIERARCHY

Source: Adapted from the Long-term Waste Management Strategy (2016)

Materials

Regeneration and renewal in the Port Lands will take advantage of innovative materials that contribute to the sustainability of the district and conservation of resources. The use of environmentally-sound materials in both the public realm and buildings conserves valuable forest and quarry resources. This will include the use of locally-sourced, renewable building materials, sustainably harvested, and high albedo materials to the extent possible. The reuse of building materials and recycling of demolition material will be also actively promoted and encouraged.

A sustainable building in the Netherlands that recycled demolition material as well as other materials found on site for building materials

4.9.4 Advancing Innovation and Economy

A key strength of the Land Use Direction is the live-work synergies that will be created with the diversity of employment clusters and uses proposed both in proximity to the new communities, but also in the communities themselves. Efforts to attract the best and most innovative companies and people and support the development of intelligent community networks will contribute to the economic success of the Port Lands and broader city. Additionally, the new communities and employment clusters in the Port Lands need to be ready for the web-enabled technologies and applications of the future.

These opportunities will promote economic growth and development and foster innovation and creativity, helping to keep Toronto competitive with major urban centres around the world for business, jobs, and talent.

Office building in Tjuvholmen, Oslo

A film shoot on a downtown Toronto street

Ships in port in Toronto

4.9.5 Fostering Human Health and Well-being

Built environments play an important role in human and population health. The design of buildings, streets and open spaces influence how people get around, which in turn influences their physical activity levels and health. Likewise, the configuration and design of parks, open spaces, and community facilities can encourage physical activity and socialization. The high performance and energy efficient buildings that will be advanced in the Port Lands will not only consume fewer resources and reduce CO2 emissions, but they will also create healthier and sunnier environments for people to live and work in.

Active Living and Working

The Port Lands will be a place that fosters active living and working. The built environment will be shaped to promote opportunities for physical activity and health, from the design of streets and open spaces, to the programming within recreational facilities, and the integration of both private and communal spaces in the new communities and housing.

Sunny Spaces and Places

Sunlight that reaches interior indoor and outdoor open spaces and the lower floors of buildings benefits everyone residing and working in a building. Bright, sunny spaces inside buildings and in the public realm are not only inviting and pleasant places to be, but they bring warmth and vitality all seasons of the year. They also contribute to the well-being of people, both physically and mentally.

The design of both interior and exterior environments are equally important to achieve sunny spaces and places. For interior spaces, key considerations relate to the size and position of windows, the depth and shape of rooms, and the colour and type of materials of internal surfaces. For exterior spaces, obstructing buildings that are too tall relative to the surrounding environment cause excessive shadow on public spaces and other buildings, block sunlight and prevent adequate daylighting within interior spaces.

People doing yoga in Canada Square

4.9.6 Planning for a Changing Climate

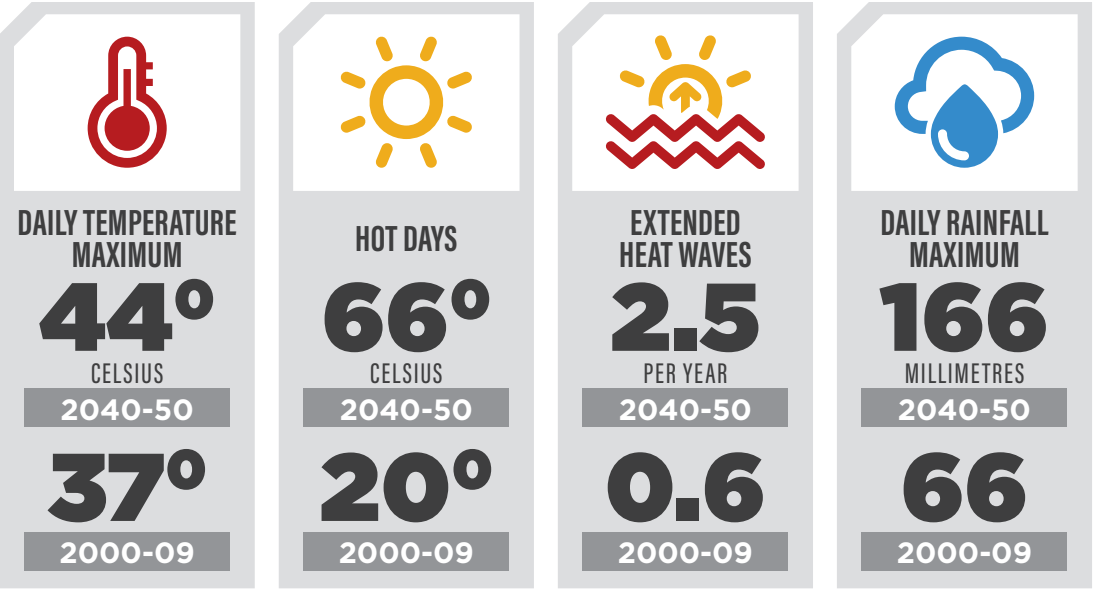
In Toronto, and elsewhere around the world, the impacts of climate change are apparent. Extreme weather events are more frequent and severe, and changes in weather patterns more prevalent. The City of Toronto's **Future Weather and Climate Drivers Study**, concluded that by 2050 Toronto can expect to experience higher daily temperature maximums, an increase in the number of hot days along with more extended heat waves, and increases in daily maximum rainfall.

To tackle these issues, approaches to reduce the vulnerability of human and natural systems and promote safe resilient communities are required. Many aspects of this Framework will contribute to not only planning for a changing climate and resilient future, but also actively mitigate the adverse effects that contribute to a changing climate in the first place.

Resilience

Resilience is the ability for districts and communities, buildings and infrastructure to respond, recover, adapt and thrive in a changing climate and in times of emergency. This requires the Port Lands to be designed to respond to overland flooding during heavier rainfalls, hotter average temperatures and extended heat waves, and power disruptions. People who will live in new tall buildings will rely to a greater extent on electricity for water supply, heating, cooling and ventilation, and elevator use, making these types of buildings particularly vulnerable, and necessitating additional consideration for resilience planning.

The naturalized mouth of the Don River, coupled with other flood protection features in the DNMP EA, will protect flood-prone areas during a regulatory event, but consideration to overland flooding and more intense rainfalls still needs to be addressed. The



Toronto's Future Weather
Source: Toronto's Future Weather and Climate Driver Study, 2011

green infrastructure both within the public realm and on-site (permeable paving, open stormwater channels and bioswales, green roofs, trees and green spaces) identified in this Framework will create a robust city nature that will assist with the absorption and detention of rainfall. This green infrastructure has the added benefit of reducing the urban heat island effect.

The passive design approach for new buildings in the Port Lands has been demonstrated to maintain liveable indoor temperatures with less energy, for longer periods of time under power outages, and will also assist in keeping places cool during extreme heat events.

The provision of resilient energy infrastructure will still need to be considered. This includes establishing reception centres during times of power outages and providing reliable multi-residential backup power systems. The establishment of a localized micro-grid to provide power to the Port Lands could operate even if power is disrupted throughout the broader city, and will be further explored through the Port Lands-wide district energy feasibility study.

Concept design for the Inner Hørrebro area using a corridor of "blue-green" spaces that can hold water in the event of sudden flashes of rain

4.9.7 Recommendations

A key element of the vision for the Port Lands is to ensure and showcase leading edge and innovative approaches to social, environmental, and economic sustainability, with a focus on creating a net zero energy and low carbon district. The recommendations identified below provide enhanced policies unique to the Port Lands context and objective for attaining net zero energy. Additionally, the recommendations below identify areas where additional exploration and study are needed as detailed design and redevelopment occurs to ensure that the Port Lands is a leader in environmental performance. Given that sustainability is embedded throughout this Framework, other sections address other key recommendations required to ensure a resilient future.

The objective for the Port Lands is for the area to be a net zero energy district. A net zero energy district is a district where no more energy is consumed than is supplied by non-fossil fuel sources. All development and public works will support this objective through the application of passive and low-impact site, building, and street design.

All development on privately-owned land will be passively designed and meet the minimum requirements in the applicable Toronto Green Standards. Development on publicly-owned land, as of the date of the adoption of this Area Specific Policy, will be passively designed and be required to exceed the Toronto Green Standards highest performance measures and include new and emerging approaches for advancing a progressive sustainability agenda and showcasing innovation.

Passive design approaches and low-impact site design employed in a development will include:

- **Providing an efficient building shape, scale and massing, location and orientation to both reduce incidences of heat loss and energy demand that minimizes shadowing on other buildings and ensures excellent sunlight conditions in the public realm and daylighting within interior spaces within a block in accordance with this Area Specific Policy;**
- **Incorporating shading strategies or design features applied to south and west facades to reduce solar heat gain in the summer and cooling loads;**
- **Minimizing the ratio of windows on a façade. Windows should not exceed 50% of a façade and a minimum sill height should be provided unless otherwise demonstrated through achieving passive design;**

Official Plan Policy Direction | Future Follow-on Work | Continued Consultation

The objective for the Port Lands is for the area to be a net zero energy district. A net zero energy district is a district where no more energy is consumed than is supplied by non-fossil fuel sources. All development and public works will support this objective through the application of passive and low-impact site, building, and street design.

- Utilizing advanced windows, such as triple glazed windows, with a demonstrated ability to minimize heat loss; and
- Retaining stormwater on site through naturalized, low impact approaches both at grade and on rooftops and to the extent possible in an urbanized context.

Passive design approaches and other measures that will be required for development on publicly-owned lands and be encouraged in development on privately-owned land, or required should legislation enable such elements, include:

- Providing high levels of insulation and thermal mass performance to minimize heat loss through the selection and use of appropriate building materials internal to the building;
- Enabling natural ventilation (such as operable windows) where possible and in consideration of any receptor mitigation required to ensure compatibility with industrial operations;
- Providing dedicated car share parking spaces or parking spaces for other emerging technologies, and electric vehicle (EV) infrastructure;
- Providing on-site renewable energy, such as solar photovoltaics (PV) and other low-carbon on-site energy generation and back-up power, while ensuring residential amenity and greening potential; and
- Ensuring a high level of airtightness to minimize heat loss from air infiltration and minimizing incidences of thermal-bridging that create pathways for heat to move from the inside of a building to the outside. Approaches could include continuous insulation, thermally-broken balconies and careful window detailing.

Where possible and in consideration of existing soil conditions, developments will use permeable pavement on sidewalks, pedestrian walkways and other paved surfaces to reduce storm water runoff.

The following will be incorporated into the design of streets where technically feasible:

- Locations for bike parking, in particular at transit stops and major destinations;
- The provision of dedicated, on-street electric vehicle parking and charging stations; and
- The provision of dedicated, on-street car-share parking locations.

Official Plan Policy Direction | Future Follow-on Work | Continued Consultation

A Port Lands-wide feasibility study will be undertaken to explore the optimal approach for introducing District Energy plants in the Port Lands. The study will include evaluating potential approaches for introducing District Energy plants that will address the following:

- Heating, cooling and energy requirements needed for the Port Lands to become a net zero energy district;
- On-site renewable energy generation potential that is balanced with other objectives of this Framework, such as biodiversity and residential amenity;
- Opportunities to harness heating and cooling from existing industrial operations and the physical infrastructure needed;
- Opportunities to link into broader city-wide systems such as Deep Lake Water Cooling;
- Economies of scale associated with precinct scale or Port Lands-wide District Energy plants, including the identification of benefits and issues;
- Financial implications to the City and/or impacts to Precinct Business and Implementation plans; and
- Life cycle costs and maintenance and operational requirements.

The City and Waterfront Toronto will explore opportunities for documenting and measuring sustainability achievements or lessons learned within the Port Lands.