

CONCESSION ROAD 3

North Village Secondary Plan Area

HIGHWAY 35 / 115

Context
Area

REGIONAL ROAD 17

Approved
Area

ARTHUR STREET

CANADIAN PACIFIC RAILWAY

Newcastle North Village Secondary Plan

Sustainability Background Report

May 1, 2020





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Report Author

Cindy MacCormack, P.Eng, LEED AP BD+C

A handwritten signature in black ink, appearing to read "Cindy MacCormack".



1. Introduction

1.1. Background

The North Village Secondary Plan (NVSP) area is located in the community of Newcastle. The NVSP area is comprised predominantly of farmland. The development that does exist in this area includes several rural residential properties, a church and a fast-food establishment.

The Municipality of Clarington is a rapidly urbanizing part of the province. The rapid growth has many benefits associated with it including vibrant, diversified communities and economies, creating more walkable streets and bringing local traffic to the downtown areas. Growth and increased urbanization often also improves accessibility and transport diversity and allows for new and expanded community facilities serving arts and culture and recreation services.

However, there is also the potential for negative impacts to the growth of the community. These impacts can include, but aren't limited to, increased traffic congestion; diminished air and water quality; increased greenhouse gas emissions; stormwater management issues and increased waste production. In addition to the environmental impacts there can also be negative changes to the culture and heritage of a developing area.

To sustainably meet the needs of a quickly growing population, Clarington Council passed a resolution establishing a green development framework to encourage environmentally responsible development in the Municipality. This framework, Priority Green Clarington, addresses Council's vision of building a sustainable, creative and caring community. Priority Green Clarington outlines the policies, criteria, process and incentives used to encourage "green development."

The development of the NVSP will reflect the requirements outlined in the Green Development Framework. In addition to these measures, sustainability principles and a sustainability plan will be developed for the NVSP secondary plan. This background report provides an overview of standards, policies and programs that will help to shape the priorities and direction of the Sustainability Plan.

1.2. Existing Conditions

Newcastle is a community in the Municipality of Clarington, Ontario. It is located north of Highway 401 and east of Highway 35/115. The NVSP area falls under the municipal jurisdiction of Clarington and the regional jurisdiction of Durham.

1.2.1. Land Use & Adjacencies

The NVSP area is primarily comprised of greenfield lands currently used primarily for agriculture. The area is located at the northern urban fringe of the Village of Newcastle.

Lands uses to the west of the site include residential properties, a place of worship and a fast food restaurant. To the north is more agricultural land use including a former hog farm. East of the site there are approximately 25 residential homes, a mobile home park and agricultural land.

South of the site through to the CP rail line are also currently agricultural lands; however, these lands are subject to draft approved plans of subdivision for low density residential uses.

Existing land use and adjacencies are important considerations for the sustainability strategy. For example, development will increase the hardscaping and consequently increase the stormwater runoff from the site.



1.2.2. Roadways & Transit

The NVSP area is bounded by a number of major roadways. Minimal active transportation is currently available on the roads surrounding the study area. Below is a summary of the surrounding roadways.

- Highway 35/115 runs north/south on the west boundary of the NVSP area. The posted speed limit along this highway is 90 km/h. Active transportation infrastructure is not currently included along this route.
- Arthur Street is a north/south municipal road with a posted speed of 70 km/h north of, and 50 km/h south of, the CN Rail crossing. Sidewalks and cycling lanes are provided south of Andrew Street.
- Concession Road 3 runs east/west along the north boundary of the NVSP area. The posted speed is 70 km/h and 60 km/h, east and west of Hwy 35/115, respectively. No active transportation is currently present.

Currently in the vicinity of NVSP there are three Durham Region Transit bus routes and one GO bus route. The closest transit stop is located at Grady Drive and Highway 17; approximately 1 kilometre south of the NVSP area.

The service has a frequency of 30-minutes during day with only the GO bus offering evening service.

A detailed review of the road network, transportation and transit conditions in the area is included in the Transportation Study prepared by AECOM.

Examining the existing transit options for the area provides insight into the current opportunities for reducing automobile dependency. Based on the current conditions there will be challenges associated with eliminating automobile dependency; however, ways to encourage active transportation within the NVSP area is an opportunity.

1.2.3. Approved Subdivision Context

As mentioned above, the lands to the south of the NVSP area are subject to draft approved plans of subdivision for low density residential uses.

The draft approved plans include approximately 920 low-density residential units (singles, semis and towns), a medium density residential block (approx. 97 units), a public elementary school, and three public parks. The draft approved subdivisions also include two stormwater management ponds within an open space buffer along the CP Rail corridor.

These lands are also owned by the North Village Landowners Group; Brookfield Residential and DG Group (formerly Smooth Run Developments).

There is a need to understand the draft approved plan to provide consistency between the draft approved plan and the NVSP while finding opportunities to enhance the sustainability through the NVSP area.



2. Importance of Green Development

Green development, or sustainable design, is the practice of increasing the efficiency with which buildings and communities use energy, water, and materials, and of reducing impacts on human health and the environment for the entire lifecycle of a development.

The growth and development of our communities has a large impact on our natural environment. The design, construction and operation of the buildings in which we live and work are responsible for the consumption of many of our natural resources. Urban sprawl, car-centric transportation networks, low housing density, lack of green space, and the segregation of work, play, and home zones are some of the most pressing issues when it comes to the unsustainable design and construction of our modern communities. Addressing these problems requires foresight and an active commitment to efficient and climate resilient design from the beginning of planning.

In addition, with the reality of climate change, there is a need to design for the climate of tomorrow to build climate resilient communities. Futureproofing and building beyond what current codes and standards require will allow our buildings and communities to last longer, be safer and provide more comfort to the residents as we move into a new climate reality.

Green development has numerous environmental and social benefits including but not limited to:

- Conserve and restore natural resources
- Climate resiliency
- Reduce energy consumption and greenhouse gas emissions
- Reduce waste
- Improve air quality
- Enhance residents health and wellbeing
- Minimize strain on local utility infrastructure
- Improve overall quality of life

Green development is an integral part of the solution to the environmental challenges facing the planet.

2.1. Climate Change

Climate change is one of the defining challenges of the 21st century. It is a global problem, and tackling it requires global action. Climate change is projected to have a significant impact on the buildings of the future. Shifting climate norms are resulting in changing weather patterns that include increased intensity and frequency of extreme weather.

The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the scientific assessment of climate change. The Synthesis Report of the IPCC Fifth Assessment Report (AR5) provides an overview of the state of knowledge concerning the science of climate change. The report states that “warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia.”

For the study the changes to the climate system were assessed under different greenhouse gas emission scenarios. Under all of the scenarios, the surface temperature over the earth is predicted to rise. The study also states that “it is very likely that heat waves will occur more often and last longer, and that extreme



The report provides projections of the climate that Durham Region will experience in the decade 2040 to 2049 compared to that experienced historically (2000 to 2009).

The Durham Region’s Future Climate (2040 – 2049) report includes climate projections for all eight local municipalities in the Region of Durham, including Clarington. In general, Clarington’s climate in the 2040 to 2049 period can be described as:

- Considerably warmer with higher humidity
- Less snow, more rain in winter
- More frequent and intense summer rain events
- Lower winds generally
- More extreme weather events with high winds and heavy rain.

Although the report selected Bowmanville as the representative community for Clarington for the report, it is assumed similar weather pattern predictions for Newcastle due to their close proximity.

The realities of climate change, of shifting climate norms and increased intensity and frequency of weather events, require action to ensure long term viability of the new community in the NVSP. To achieve a sustainable future, both climate change adaptation and mitigation are required. Adaptation is ensuring the buildings in the NVSP will be able to withstand ever fiercer environmental loads, while mitigation is minimizing the severity of these future environmental loads on the community.

NVSP Takeaways

- ✓ Energy efficiency and GHG reduction in buildings &
- ✓ Resiliency to increased weather intensity
- ✓ Passive measures for heat reduction

2.2. Scope of Sustainability

The definition of sustainability can often mean different things depending on the priorities of the community. For the purpose of the NVSP secondary plan the scope of sustainability will include the following:

Environmental: a focus on protecting, creating and enhancing green space, minimizing the strain on resources and materials and reduces the impact of the development on climate change.

Social: a focus on developing healthy social relationships to improve the health and well-being of the residents.

Climate resilience: a focus on creating a community that looks to the future and plans for future climate patterns.

precipitation events will become more intense and frequent in many regions.” The figure below, provided in the IPCC Synthesis report illustrates the increase in temperature and precipitation historically and projected forward.

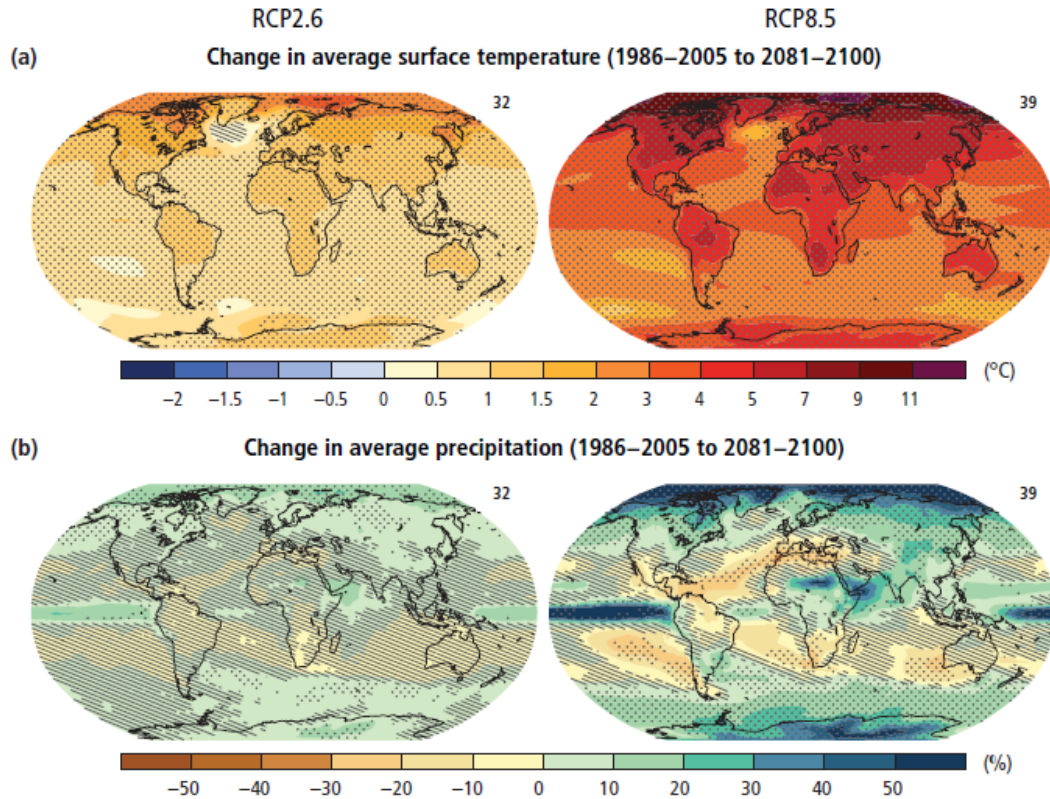


Figure SPM.7 | Change in average surface temperature (a) and change in average precipitation (b) based on multi-model mean projections for 2081–2100 relative to 1986–2005 under the RCP2.6 (left) and RCP8.5 (right) scenarios. The number of models used to calculate the multi-model mean is indicated in the upper right corner of each panel. Stippling (i.e., dots) shows regions where the projected change is large compared to natural internal variability and where at least 90% of models agree on the sign of change. Hatching (i.e., diagonal lines) shows regions where the projected change is less than one standard deviation of the natural internal variability. (2.2, Figure 2.2)

In 2018, the IPCC released Special Report: Global Warming of 1.5 C. The report examines the impacts of global warming of 1.5°C above pre-industrial levels. The climate modelling used for the IPCC Special Report assessment projects significant differences in the climate today and that predicted for a global warming of 1.5°C. Similar to the AR5 Report, these differences include increases in mean temperature in most regions, hot extremes in temperature and episodes of heavy precipitation in several regions.

In response to climate change predictions, governments around the world have committed to work together to limit global warming. The Paris Agreement under the United Nations Framework Convention on Climate Change was entered into force on November 4, 2016. The agreement established a goal of holding the increase in global temperature to 1.5°C–2°C above pre-industrial levels and to engage in adaptation planning and implementation.

More locally, in 2014 Durham Region undertook a study to look into the Region’s future climate conditions. The results of this study were reported in the document: Durham Region’s Future Climate (2040 – 2049).



3. Federal Sustainability Direction

The Federal Sustainable Development Act guides the Government of Canada’s vision for a sustainable Canada. The act defines sustainable development as:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

To identify goals and strategies to achieve the vision of a sustainable Canada, The Federal Sustainable Development Strategy (FSDS) has been developed. The FSDS sets out the Government of Canada’s sustainable development priorities, establishes goals and targets, and identifies actions to achieve them. The 2019–2022 FSDS is Canada’s fourth development strategy and provides an action plan for the next 3 years centred on 13 aspirational, long-term goals.

The following FSDS aspirational goals can be applied to the NVSP development:

- **Effective action on climate change:** A low-carbon economy contributes to limiting global average temperature rise to well below 2 degrees Celsius and supports efforts to limit the increase to 1.5 degrees Celsius
- **Modern and resilient infrastructure:** Modern, sustainable, and resilient infrastructure supports clean economic growth and social inclusion
- **Clean energy:** All Canadians have access to affordable, reliable and sustainable energy
- **Sustainable food:** Innovation and ingenuity contribute to a world-leading agricultural sector and food economy for the benefit of all Canadians
- **Connecting Canadians with nature:** Canadians are informed about the value of nature, experience nature first hand, and actively engage in its stewardship
- **Safe and healthy communities:** All Canadians live in clean, sustainable communities that contribute to their health and well-being

NVSP Takeaways	
✓	Energy efficiency and GHG reduction in buildings & infrastructure
✓	Resiliency to increased weather intensity
✓	Renewable energy for the community
✓	Connection to food and local ecosystems
✓	Walkable and active community for wellness



4. Provincial Policy Considerations

4.1. Provincial Policy Statement

The Provincial Policy Statement provides policy direction on matters of provincial interest with respect to land use planning and development. The Provincial Policy Statement “provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment.”



The policies are divided under three main categories: Building Strong and Healthy Communities, Wise Use and Management of Resources and Protecting Public Health and Safety.

Through review of the policies the following should be considered further in developing the sustainability strategy for the NVSP community.

- 1.1.1 Healthy, livable and safe communities are sustained by:
 - promoting the integration of land use planning, growth management, *transit-supportive* development, *intensification* and *infrastructure* planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs;
 - promoting development and land use patterns that conserve biodiversity; and
 - preparing for the regional and local impacts of a changing climate.
- 1.1.3.2 Land use patterns within *settlement areas* shall be based on densities and a mix of land uses which:
 - minimize negative impacts to air quality and climate change, and promote energy efficiency;
 - prepare for the impacts of a changing climate;
 - support active transportation;
 - are transit-supportive, where transit is planned, exists or may be developed;
- 1.5.1 Healthy, active communities should be promoted by:
 - planning public streets, spaces and facilities to be safe, meet the needs of pedestrians, foster social interaction and facilitate active transportation and community connectivity;
 - planning and providing for a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parklands, public spaces, open space areas, trails and linkages, and, where practical, water-based resources;
- 1.6.6.1 Planning for sewage and water services shall:
 - ensure that these systems are provided in a manner that prepares for the impacts of a changing climate;
 - promote water conservation and water use efficiency;
- 1.6.6.7 Planning for stormwater management shall:
 - minimize erosion and changes in water balance, and prepare for the impacts of a changing climate through the effective management of stormwater, including the use of green infrastructure;
 - maximize the extent and function of vegetative and pervious surfaces; and
 - promote stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development



- 1.8.1 Planning authorities shall support energy conservation and efficiency, improved air quality, reduced greenhouse gas emissions, and preparing for the impacts of a changing climate through land use and development patterns which:
 - promote the use of active transportation and transit in and between residential, employment (including commercial and industrial) and institutional uses and other areas;
 - promote design and orientation which maximizes energy efficiency and conservation, and considers the mitigating effects of vegetation and green infrastructure; and
 - maximize vegetation within settlement areas, where feasible.
- 2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.
- 2.2.1 Planning authorities shall protect, improve or restore the quality and quantity of water by:
 - planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality

NVSP Takeaways

- ✓ Design to support active transportation options
- ✓ Prepare for impacts of a changing climate
- ✓ Stormwater management enhancements to protect water and support climate resiliency
- ✓ Plan for the conservation of resources – water and energy

4.2. Ontario Planning Act

The Planning Act identifies matters of provincial interest which should be regarded by municipalities when undertaking planning for their communities. At a high level, these areas of interest include:

- Protection of ecological systems
- Supply, efficient use and conservation of energy and water; and
- Promotion of development that is designed to be sustainable, to support public transit and to be oriented to pedestrians.

Under the Planning Act municipalities have the ability to create site plan control areas to address matters relating to sustainable design. Under its Official Plan, all of Clarington is designated as a site plan control.

NVSP Takeaways

- ✓ Design to reduce car dependency
- ✓ Energy and water efficient buildings

4.3. Ontario Building Code

The Ontario Building Code Act establishes the minimum requirements for buildings in Ontario. As part of on-going Provincial efforts to conserve resources changes continue to be incorporated into the building code to improve the energy and water efficiency of buildings, thereby reducing consumption and greenhouse gas emissions.



In 2017 the Ontario Building Code increased the energy efficiency requirements for buildings. The changes for low-rise housing is included in the Supplementary Standard SB-12. Highlights of the energy efficiency measure included in the 2017 Ontario Building Code in SB-12 include:

- New prescriptive compliance packages are 15 per cent more energy efficient than previous packages. This will impact the installation of exterior insulation, windows and doors, skylights, space heating, heat recovery ventilation (HRV) and domestic water heaters.
- Energy Recovery Ventilation (ERV) or HRV is now required for all prescriptive compliance packages.
- Drain water heat recovery (the process of recovering energy from warm water to preheat incoming cold water) units are now required for all prescriptive compliance packages.

NVSP Takeaways

- ✓ Energy and water efficient buildings

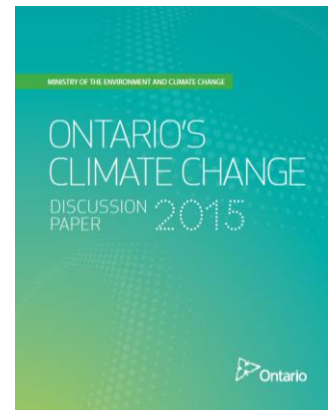
4.4. Ontario’s Climate Change Discussion Paper

Ontario’s Climate Change Discussion Paper 2015 was released to engage the public and inform the development of the Provincial climate change strategy.

The discussion paper identified the transportation and building sectors as significant contributors to greenhouse gas emissions province-wide and initiatives to address these emissions were noted.

Key initiatives identified to address the issue in the building sector include:

- Curbing urban sprawl and creating complete communities that are healthy, walkable and transit supportive
- Protecting agricultural lands, natural resources and the environment
- Creating new buildings that are energy efficient, harness renewable energy and use integrated energy infrastructure, such as direct energy.



NVSP Takeaways

- ✓ Design to support transportation options and mobility
- ✓ Protect adjacent agricultural lands
- ✓ Energy and water efficient buildings
- ✓ Explore incorporation of renewable or district energy infrastructure

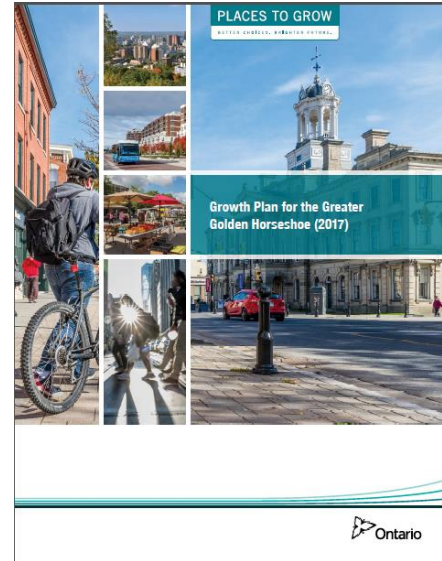


4.5. Growth Plan for the Greater Golden Horseshoe

Similar to the Provincial Policy Statement discussed above, the intent of the Growth Plan is to encourage efficient land use and development patterns. The policies outlined in the Growth Plan aim to curb urban sprawl, revitalize downtowns, create complete communities, protect natural resources and increase housing and transportation choices.

The Growth Plan outlines the following requirements and/or directions with respect to sustainability initiatives:

- Specified criteria through which decisions on land use and transit are made in order to ensure they are mutually supportive.
- Requirements for active transportation components, both pedestrian and bicycle networks, to be integrated into transportation planning.
- Construction of new, or expanding existing, municipal water and waste water systems is only allowed where strategies for water conservation and water demand management are being implemented.
- Encourages municipalities to implement and support innovative stormwater management actions
- Directs municipalities to develop and implement Official Plan policies and other strategies that support conservation objectives related to water, energy, air quality and integrated waste management.



NVSP Takeaways

- ✓ Incorporate active transportation components
- ✓ Implement innovative stormwater management strategies



5. Regional Policy Considerations

5.1. Durham Region Official Plan - 2017

Within the Official Plan, Durham Region has identified sustainability goals for the Region. A summary of the goals outlined in the Durham Region Official Plan are as follows.

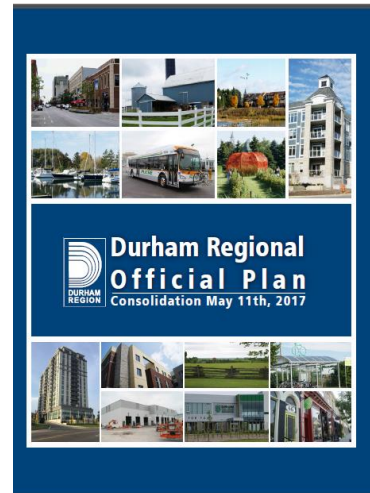
Section 1: Basis, Goals and Direction

The basis of the Official Plan, as it relates to sustainability: “e) natural resources need to be protected for future generations and managed to be sustainable”

The goals of the Official Plan, as it relates to sustainability, includes the following excerpts:

“b) to live in harmony with the natural environmental and heritage of the Region”

- “e) to create...sustainable communities within livable environments for the enjoyment of present and future generations”
- “g) to manage the resources in the Region in an orderly, efficient and responsible matter”



Section 2: Environment

- Consideration for the natural environment and its ecological functions (i.e. key natural heritage and hydrological functions)
- Community planning should minimize pollution of air, water, and land resources
- Respect the historical and cultural heritage of the Region
- Recognize the relationship between the built environment and natural environment when conducting planning activities
- Enhancement of public health and safety through good community planning and design

NVSP Takeaways

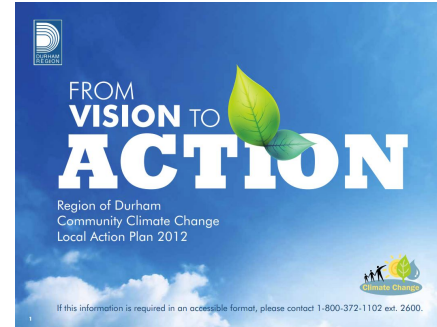
- ✓ Protect and sustainably manage natural resources
- ✓ Minimize the impact on the natural environment



5.2. Region of Durham Climate Change Local Action Plan - 2012

The Region of Durham has taken a strong stand to support sustainable development, particularly in relation to climate change. Some key initiatives undertaken by the Region to address climate change and provide responsible long-range planning solutions for future growth and development are identified in the Region of Durham Climate Change Local Action Plan. These initiatives include:

- Establishing the Durham Region Roundtable on Climate
- Setting community greenhouse gas reduction targets of 5% by 2015 (which has been exceeded), 20% by 2020 and 80% by 2050 (absolute targets based on 2007 emission
- Creation of a Community Climate Change Local Action
- Climate Education program focused on schools
- Community Climate Adaptation Plan: Phase 1
- Development of a Corporate climate program addressing



NVSP Takeaways

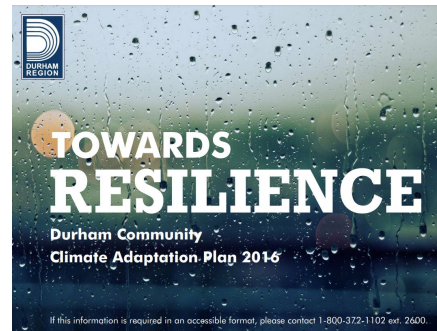
- ✓ Energy efficient new buildings exceeding the current Ontario Building Code
- ✓ CO2 sequestering through tree planting to reduce GHG emissions
- ✓ Climate resilient building and infrastructure

5.3. “Towards Resilience” Durham Community Climate Adaptation Plan – 2016

Change Local Action Plan. The purpose of the “Towards Resilience” report is to enable Durham to become more resilient to their future climate conditions.

The goals of the Plan relevant to community planning

- Increase the resiliency of community infrastructure, programs and services to the changing climate in Durham;
- Advance the infusion of climate change information into the business planning of both the public and private sectors;
- Improve the awareness, knowledge, skills and resources of government, citizens and business





- Improve the sustainability of Durham region and its attraction as a place to invest, live, and play

NVSP Takeaways

- ✓ Incorporate climate resilience features for all new buildings
- ✓ Incorporate climate resiliency in community design
 - ✓ Urban heat island reduction - reflective surfaces and increase in tree cover to mitigate the impact of climate change (i.e. increased temperatures)
 - ✓ Modifying typical tree planting strategies in terms of location and species for drought tolerance
 - ✓ Address urban flooding – Implement low impact development
- ✓ Include electrical grid resilience
- ✓ Take food security considerations into site designs

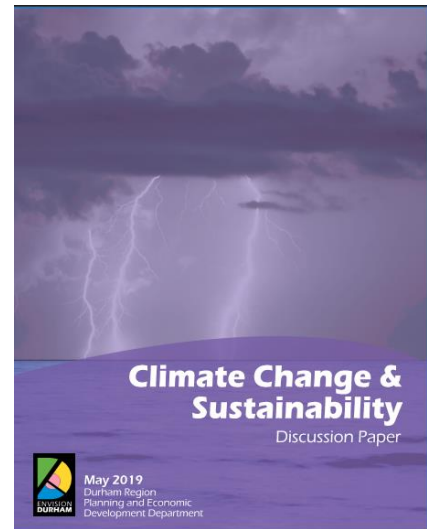
5.4. Envision Durham - 2019

On May 2, 2018, Durham Regional Council authorized staff to proceed with Envision Durham; a 5-year comprehensive review of the Regional Official Plan.

In March of 2019 a discussion stage of the process was initiated, wherein participants were asked to provide input on various theme-based Discussion Papers. One of the discussion papers developed as part of this process was the Climate Change and Sustainability Discussion Paper. The Climate Change and Sustainability Discussion Paper provides an overview of the trends and long-term impacts that climate change will have on Durham Region.

As noted in the discussion paper, expected changes to the Region’s overall climate by 2050 include:

- A 4°C average increase in annual temperatures.
- Substantial increases in the number of days of rain greater than 25 millimetres.
- More extreme rainstorm events, including a 15 per cent increase in the potential for violent storms.



In addition, the paper highlights the current Region Official Plan policy framework with respect to climate change and sustainability and recognizes the Provincial policy requirements.

NVSP Takeaways

- ✓ Incorporate climate resilience features for all new buildings
- ✓ Incorporate climate resiliency in community design
 - ✓ Urban heat island reduction - reflective surfaces and increase in tree cover to mitigate the impact of climate change (i.e. increased temperatures)
 - ✓ Address urban flooding – Implement low impact development



5.5. “Keeping Our Cool” - 2018

Urban heat islands absorb and retain heat exacerbating already warm conditions. This can have impacts both on health as well as on greenhouse gas emissions as cooling equipment usage to combat the heat increases.

The “Keeping Our Cool” report takes a closer look at urban heat islands in the context of the risks and concerns for the Region. The effects of urban heat islands are intensified by both land use and development decisions and by climate change. Durham Region is projected to become hotter (Durham Region’s Future Climate (2040 – 2049)) due to climate change. As such, identifying measure to mitigate the effects of urban heat islands is relevant to the

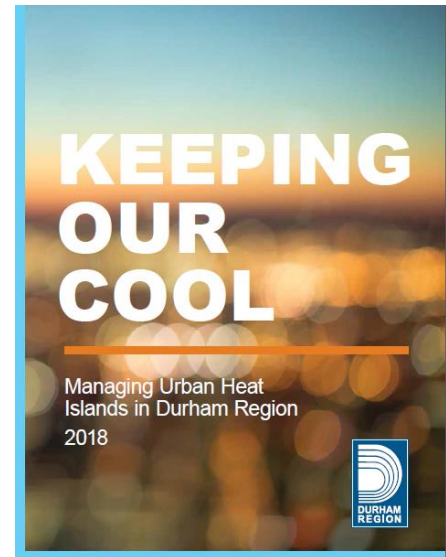
The report identifies the following factors that contribute to the intensification of heat islands include:

- Removal of vegetation
- Dark surface materials
- Waste heat (from equipment)

These factors are often negatively impacted by increased development. Specifically, increased housing and infrastructure means more conversion of “cool” vegetated landscapes to “hot” areas with pavement, roads, and dark roofs.

Several measures have been identified in the “Keeping our Cool” report to reduce the effect of heat island effect.

- Planting trees and urban greening
- “Cool” and “green” roofs
- Reflective surfaces
- Increasing energy efficiency in appliances and equipment



NVSP Takeaways

- ✓ Reflective hardscape and roof surfaces
- ✓ Energy efficiency and conservation through building design
- ✓ Incorporate landscape restoration and urban forestry



5.6. Durham Community Energy Plan – 2019

The Durham Community Energy Plan (DCEP) is a comprehensive long-term plan that serves to define community priorities around energy. In developing the DCEP three future scenarios were examined: Business as Usual, Business as Planned, and Low Carbon Pathway. Each of the scenarios were analysed based on a set of outcomes such as energy consumption, costs, emissions, economic and employment implications. Based on the results of the analysis, the Low Carbon Pathway was selected as the preferred scenario for the Region.

The overall goal of the DCEP is to transition Durham to a clean energy economy. The target date for this transition being 2050. To meet their 2050 targets a number of programs have been identified for development. The programs of interest to NVSP include the following.

- Durham Green Standard: Enhanced energy performance for new buildings
 - The purpose of the standard is to increase the performance of new buildings.
- Co-ordinating Land-use Policies: Sustainable Growth
 - Imbed measures such as solar orientation, district energy systems, electric vehicle infrastructure, low-energy subdivisions, new public transit and walkable communities into secondary plans

NVSP Takeaways

- ✓ Energy efficiency and conservation through building design
- ✓ Create walkable communities
- ✓ Incorporate opportunities for electric vehicle infrastructure



6. Conservation Authority Considerations

There are two conservation authorities within the Municipality of Clarington; Central Lake Ontario Conservation Authority and Ganaraska Region Conservation Authority. Newcastle is within the boundary of the Ganaraska Region Conservation Authority. The watersheds of the GRCA covers an area of 361 square miles from Wilmot Creek in Clarington to east of Cobourg from the south shore of Rice Lake down to Lake Ontario.

The Ganaraska Region Conservation Authority's overall goal is the conservation, restoration, development and management of natural resources on a watershed basis while providing for the public enjoyment of the lands it oversees. The GRCA works with municipalities to ensure that the tenets of the Provincial Policy Statement are upheld and provides input into development proposals through planning review and regulation of development through the Conservation Authorities Act.

The Ganaraska Region Conservation Authority regulates:

- development in river or stream valleys, wetlands, shorelines and hazardous lands and associated allowances; and
- the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or for changing or interfering in any way with a wetland.

To provide guidance with respect to stormwater management the GRCA has prepared a manual titled Technical and Engineering Guidelines for Stormwater Management Submissions. The purpose of which is to provide a stormwater management (SWM) planning framework, complete with associated criteria and design guidelines. This guideline includes the following under Section 6.1: All submissions shall also refer to the requirements of the following documents:

- March 2003 Ministry of the Environment (MOE) "Stormwater Management Planning and Design Manual"
- 1995 Ministry of Transportation (MTO) "MTO Drainage Management Manual"
- 2002 Ministry of Natural resources (MNR) "River and Stream Systems Erosion Hazard Limit Technical Guide"
- December 2006 Greater Golden Horseshoe Area Conservation Authorities' "Erosion and Sediment Control Guideline for Urban Construction"
- August 2011 Credit Valley Conservation and Toronto and Region Conservation "Low-Impact Development Stormwater Management Planning and Design Guide"



7. Clarington Policy Considerations

7.1. Clarington Official Plan

On November 1, 2016 Clarington Council adopted the Municipality's Official Plan Amendment No. 107. The Plan Amendment included new policies that provided for a more urban community, created walkable neighbourhoods, built great public spaces, and created complete streets designed for people and not just cars. It also provided plans for the future development of Clarington to become a fully rounded community with jobs and services for residents and protects key environmental and agricultural lands.

In June 2017, Amendment 107 was approved by the Regional Municipality of Durham. Several sections of the amended Official Plan reference sustainability.

The Vision section of the environmental plan includes both objectives for sustainable development as well as for healthy communities.

Section 2.2.1 Sustainable Development:

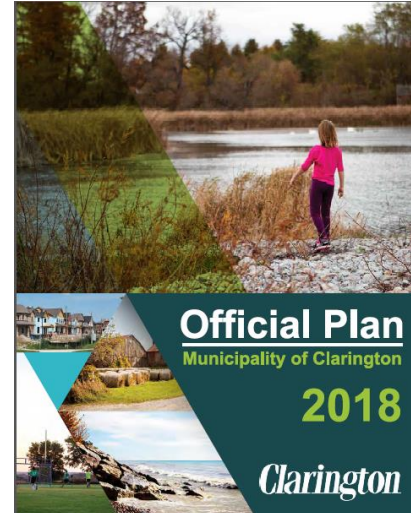
"The future development of Clarington will be pursued in a manner that ensures current needs can be met without compromising the ability of future generations to meet their own needs. This Plan seeks to implement the following directions:"

- Thinking Globally; Acting Locally
- Ecosystem Integrity
- Cumulative Impacts
- Remediation and Regeneration
- Energy and Water Conservation
- Shared Land Stewardship
- Sustainable Design

2.2.2 Healthy Communities

"A healthy community will nurture the collective health and well-being of residents to provide for a high quality of life. This Plan seeks to implement the following directions:"

- Personal Well-being
- Urban Design Excellence
- Economic Vitality
- Community Identity
- Public Involvement
- Arts, Culture and Heritage
- Housing Diversity





“To create a built environment that celebrates and enhances the history and character of Clarington, fosters a sense of place for neighbourhoods and communities, promotes a positive image of the Municipality, demonstrates a high quality of sustainable architectural design, and enhances the well-being of residents, both present and future.”

“To create neighbourhoods that give priority to sustainable design, including environment-first principles, walkability, land efficiency, compact and connected communities, and managing resources and energy efficiency efficiently.”

In addition to the above, sustainability is woven throughout the chapters including:

- Public Realm
- Built Form
- Sustainable Design and Climate Change

7.2. Clarington Strategic Plan

Clarington's Council has developed a Strategic Plan to guide the Municipality and set out its vision for the 2019-2022 term.

The latest strategic plan outlines five strategic priorities for the term. Two of the five relate to sustainability: Sustainable Infrastructure Growth and Environmental Sustainability.

Set goals are associated with each of the priorities. Below is an outline of the sustainability goals of the Strategic Plan.



C. Sustainable Infrastructure Growth

- C.1. Develop an Affordable Housing Policy
- C.2. Develop strategies for infrastructure investments, including employment lands

E. Environmental Sustainability

- E.1. Advance waste reduction initiatives by promoting the four Rs: Refuse, Reduce, Reuse and Recycle

7.3. Priority Green Clarington

Priority Green Clarington was established to support the Municipality's commitment to sustainable development. To achieve this, Priority Green Clarington a “Local Planning for Global Stewardship” initiative, which is designed to set a new standard for new residential development that prioritizes sustainability, promotes innovation and improves the community's quality of life.

Vision

Priority Green Clarington identifies a vision for the Municipality. The Municipality of Clarington's Vision, adopted by Council, is: Building a sustainable, creative and caring community.





Priority Green Clarington aims to:

Set a new standard for residential development that prioritizes sustainability, promotes innovation and improves the community’s quality of life.

8. Clarington Green Development Program

Clarington is going to continue to experience significant growth and therefore, it is of utmost importance to set a new “green” standard for residential development going forward. The Green Development Program is primarily geared towards residential development and aims to place sustainability at the forefront of the land development process.

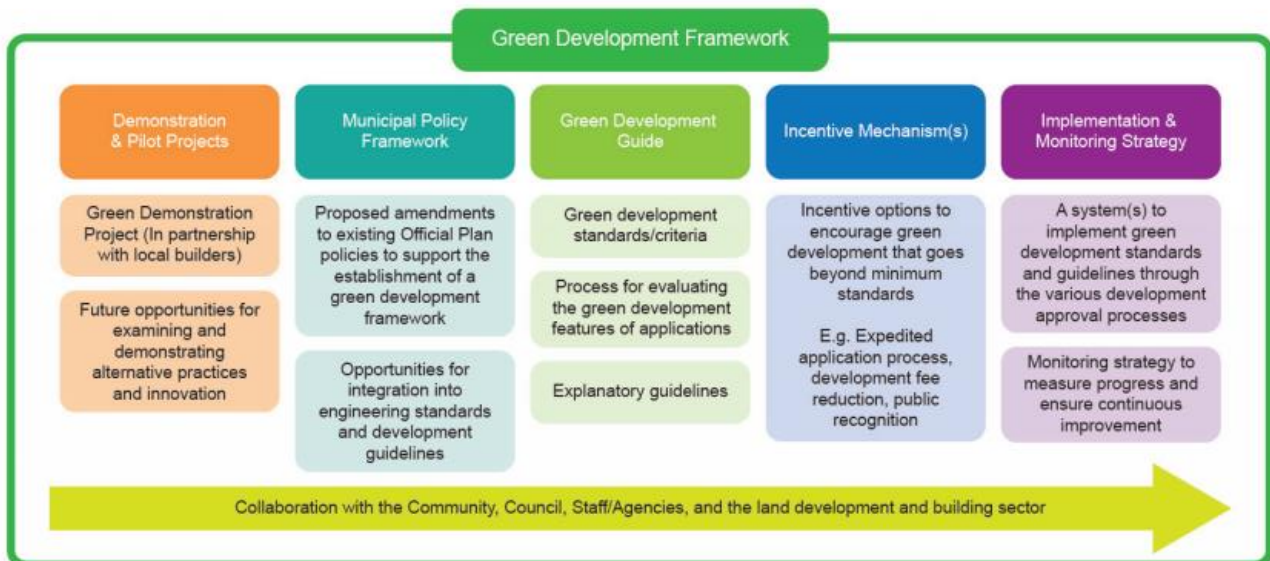
8.1. Policy Changes Support Green Development Program

Proposed changes to Clarington’s Official Plan to implement a green development program (proposed policies 5.5.4 and 5.5.5) were implemented as seen in the 2017 version of the Clarington Official Plan.

- 5.5.4: “Development proposals shall incorporate sustainable design practices and standards such as green infrastructure and green building design features to reduce greenhouse gas emissions and adapt to climate change”
- 5.5.5 “To encourage development that exceeds the minimum standards outlined in the Green Development Program, the Municipality in collaboration with utilities and other key agencies, will explore incentive programs designed to reward sustainable design and development. This may include giving priority to processing development applications which exceeds the minimum standards”

8.2. Framework

The framework for the Green Development Program consists of five main components and provides a





“roadmap” to green development in Clarington. The flowchart below, from the Green Development Framework Guideline, outlines the five components and the associated tasks and responsibilities.

Additional information on the Green Development Guide and Demonstration & Pilot Projects are provided in the sections below.

8.2.1. Green Development Guide

The Green Development Guide includes strategies to be used to evaluate the sustainability of a proposed development and includes both design and construction measures.

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-
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8.2.2. Demonstration

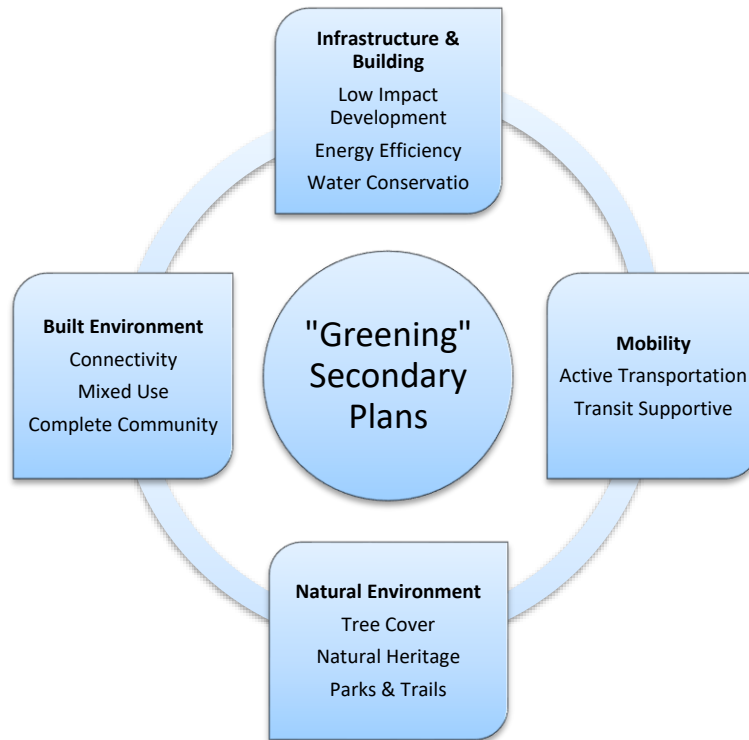
A demonstration project was conducted to enable improved knowledge of green building and the opportunities linked to green building. The Green Demonstration Project was carried out by the Municipality, in collaboration with local developers, wherein six “green” homes were built. These homes demonstrated water efficiency improvements, reduced consumption of electricity, and reduced daily water consumption compared with Ontario Building Code 2012. All of the homes built were single-family residences; two townhouses and four single detached. The average floor area was 224 m².

In general, the green practices in the demonstration homes included appliance and fixture efficiency upgrades and envelope and mechanical equipment improvements beyond Code requirements. Based on a comparison to the Code-built homes, the As-built demonstration homes show annual energy savings ranging from 9% to 12% and water savings from 8% to 12%.

Note: The demonstration homes were constructed and compared to the 2012 Ontario Building Code. Since then, the Code has advanced with respect to its energy efficiency requirements. As such, measures beyond those used in the demonstration homes would be required to realize similar savings results.

8.3. Green Building Criteria: Secondary Plan

themes and some of the main elements within each.



Below is a summary of the secondary plan criteria identified for each theme in the Green Development Guide as they pertain to NVSP.

8.3.1. Built Environment

- Greenfield Areas – minimum housing density of 50 residents and jobs combined per gross developable hectare
- Place higher-density development along Regional and Local Corridors within Centres to promote transit-oriented development
- Residential developments should be located within 800m (walking) of at least three of the following amenities: school, community/cultural facility, recreation facilities (library, retail/convenience commercial use), pharmacy or medical facility, and institutional use (i.e. daycare)
- School sites should neighbour public parks and/or community facilities
- Design an interconnected street network with respect to the Municipality’s established roads and networks
- Preference given to grid/modified grid design as it promotes walkability and interconnection

What Applies to NVSP?	
✓	Greenfield - minimum housing density
✓	800m walking distance to amenities where provided (a neighbourhood centre designation within the NVSP is shown in the Clarington Official
✓	Interconnected street network
✓	Grid design where feasible



8.3.2. Mobility

- Design a network of mixed-use, walkable nodes bound by transit and accessible by surrounding neighbourhoods by bicycle and foot
- Medium to short block lengths are preferred to support active transportation
- Safe and direct routes for pedestrians
- Arterial and collector roads shall have sidewalks and street trees on both sides
- Local roads are encouraged to have sidewalks and street trees on both sides
- Think about pedestrians first, then cyclists, transit and lastly cars when creating streets (respect this hierarchy)
- Integrate pedestrian and cycling network into the existing city
- The pedestrian and cycling network should be designed to minimize environmental impacts and accommodate a range of
- Continuous and direct collector streets for transit access and efficiency of service

8.3.3. Natural Environment and Open Space

- Protect and, where possible, enhance the Natural Heritage System
- Ensure connectivity between natural heritage features
- Maintain and promote views of visible landmarks including Natural Heritage System features
- Integrate natural heritage features into public space, parks, and trail systems
- Residents should have access to parks within a 400m walking radius
- Parks and open spaces should be integrated into trail networks, sidewalks and other pedestrian linkages
- An optimal tree cover target should be established to be achieved post-development

What Applies to NVSP

- ✓ Walkable nodes
- ✓ Connected to adjacent neighbourhoods
- ✓ Shorter block lengths
- ✓ Sidewalks and trees on both sides
- ✓ Connect to existing trail and path systems

What Applies to NVSP

- ✓ Provide connections between parks/open spaces
- ✓ 400m walking distance to parks
- ✓ Integrate parks into pedestrian linkages
- ✓ Tree coverage



8.3.4. Infrastructure and Buildings

- For stormwater, ensure that the development (1) makes use of the drainage patterns to minimize the risk of flooding, (2) maximizes retention and infiltration with minimal impact on natural features (wetlands, groundwater, etc.) and (3) gives priority to the use of low impact development techniques (i.e. on-site source controls for stormwater capture)
- Minimize hard surface infrastructure such as parking areas
- Stormwater should be integrated into the design of landscapes where possible
- Integration of community gardens within public spaces should be provided
- Maximize both energy efficiency and water conservation into the design of streetscapes, parks and outdoor public spaces (examples: LED street lighting, drought-tolerant landscaping, etc.)
- Maximize passive solar energy opportunities at subdivision and site plan design through road design/orientation
- The plan should include a feasibility analysis/study of developing the neighbourhood to accommodate the incorporation of district energy or renewable energy systems

What Applies to NVSP

- ✓ Stormwater management for quantity control
- ✓ Prioritize LID measures
- ✓ Energy efficient infrastructure
- ✓ Drought tolerant landscape
- ✓ Consider incorporation of district and renewable energy
- ✓ Optimize passive solar orientation where feasible



9. PIC #1 Sustainability Insights

The Public Information Centre (PIC) #1 was held at the Newcastle Pentecostal Church on November 21, 2019, from 6:00 pm to 8:00 pm. In total, 41 people attended the PIC. Feedback was received through three means: informal discussions, “Dot-mocracy” activity and feedback forms.

Concerns raised at PIC #1

- Rise in crime
- Increase in traffic
- Lack of housing and amenities for young people
- Pedestrian safety

“Wants” raised at PIC #1

- Seniors housing and amenities catering to seniors
- Daycare
- “Starter homes” for young families
- Cooperative/supportive housing
- Safe options for walking and cycling
- Variety of trees and landscaping
- Preserve agricultural/historical aesthetic of Newcastle

The Dot-mocracy activity included one panel with images depicting concepts and design elements related to the Guiding Priority of Sustainability & Climate Change.

Feedback received on this panel was as follows:

“Landscaping with native plants” = 10 votes

“Reduced vehicular dependence” = 7 votes

“Green infrastructure” = 7 votes

“Local food production” = 6 votes

“Protection of biodiversity” = 6 votes

Of less importance for the group in attendance, based on voting results, appears to be “Net zero carbon buildings” (2 votes) and “Eco-friendly building practices” (3 votes).



10. Key Takeaways for NVSP

10.1. Policies & Standards Takeaways Summary

Reviewing the takeaways of the various provincial and municipal policies, plans, reports and standards it can be seen that common themes emerge. A total of seven key themes have been used to categorize the major considerations for NVSP.

The table below summarizes these key themes with specific considerations.

Climate Resilience	<ul style="list-style-type: none"> - Incorporate climate resilience features for all new buildings - Prepare for impacts of a changing climate
Stormwater Management	<ul style="list-style-type: none"> - Implement innovative stormwater management strategies - Address urban flooding – Implement low impact development
Energy	<ul style="list-style-type: none"> - Design energy and water efficient buildings - Consider community energy systems. - Explore incorporation of renewable or district energy infrastructure - Reduction of greenhouse gases
Urban Forestry	<ul style="list-style-type: none"> - Minimize the impact on the natural environment - CO2 sequestering through tree planting - Modifying typical tree planting strategies in terms of location and species - Incorporate landscape restoration and urban forestry
Heat Island	<ul style="list-style-type: none"> - Minimize the heat island effect of increased development - Reflective hardscape and roof surfaces
Transportation & Mobility	<ul style="list-style-type: none"> - Incorporate active transportation components - Support transit and reduce auto-dependence

10.2. Clarington Framework Takeaways Summary

The priorities of the Official Plan, Strategic Plan and Priority Green are synthesized and implemented through Clarington’s Green Development Framework. The main considerations for NVSP identified through this framework are summarized in the table below.

It is important to note, the similarities between the Clarington Framework takeaways to those above identified for the provincial and regional policies.



Built Environment	<ul style="list-style-type: none">- Greenfield: minimum housing density required- 800m walking distance to amenities- Interconnected street network- Incorporate a neighbourhood centre if feasible- Grid design where feasible
Mobility	<ul style="list-style-type: none">- Walkable nodes- Connected to adjacent neighbourhoods- Shorter block lengths- Sidewalks and trees on both sides- Connect to existing trail and path systems
Natural Environment	<ul style="list-style-type: none">- Provide connections between parks/open spaces- 400m walking distance to parks- Integrate parks into pedestrian linkages- Tree coverage
Built Environment	<ul style="list-style-type: none">- Stormwater management for quantity control- Prioritize low impact development measures- Energy efficient infrastructure such as street lighting- Drought tolerant landscape- District and renewable energy- Optimize passive solar orientation where feasible

10.3. NVSP PIC #1 Takeaways Summary

Summarizing the main priorities identified in the first PIC for the NVSP reveals two main themes:

- Reduced automobile dependence
- Green infrastructure, biodiversity and native plants



11. Summary

The key takeaways identified through this background review will serve as the foundation for the development of the Sustainability Principles. The focus will be to first address considerations that were identified in all areas (Policy, Clarington Framework, PIC and “Other”). These key areas include:

- Transportation and mobility
- Green space and urban forestry

It is recommended that the following other key areas also be considered in the development of the principles based on their frequency of appearance:

- Stormwater management and LID
- Heat island reduction
- Climate resiliency
- Energy efficiency

The next important step will be to develop a set of sustainability principles that are relevant to NVSP and that move the NVSP forward in contributing to Clarington’s overall sustainability goals.

Based on the information gathered in this report, the following preliminary concepts for sustainability principles have been developed and will be further considered and evolved during the next stages:

- Foster a resilient, sustainable, safe and healthy community
- Minimize contribution to global climate change and work towards net positive energy, water, and waste.
- Enhance livable neighbourhood ideals using public green spaces and urban squares/parkettes as significant design features and by designing walkable neighbourhoods.
- Create inclusive, diverse and unique neighbourhood that has a high level of connectivity for multi-modal transportation opportunities.
- Encourage active, accessible, safe and affordable communities that provide physical and social opportunities for our residents from youth to seniors.
- Promote the use of materials from sustainable sources, minimize life-cycle impacts and help reduce consumption.
- Encourage a built form and site design that is attractive, supportive of sustainable transportation options and reduces the reliance on a car.
- Protect, enhance and restore biodiversity and natural ecosystems.

However, this is a preliminary list and other priorities and/or principles may be added in collaboration with the Project Team and the Municipality of Clarington through the secondary plan process.