

3.0 Infrastructure Requirements of Development

3.1 General Infrastructure

Unless noted otherwise in the subsequent Subsections of Chapter 4 or in the Development Agreement, the Town of Essex will require full municipal services for all developments. These services on the right-of-way or within easements shall include:

- Asphalt paved roads
- Sidewalks
- Concrete curb and gutter
- Precast concrete catchbasins with cast iron frame and grates
- Road subdrains
- Storm sewers and services
- Sanitary sewers and services
- Precast concrete manholes with cast iron frames & covers, safety landing (when required) and aluminum ladder rungs
- PVC pipe watermains with cast iron fittings and/or PVC fittings, valves and fire hydrants with Storz couplings or pumper fittings
- Private service connections including storm and sanitary PDC's, and copper or polyethylene water services. Check valves are required on sump pump discharge lines. Backflow prevention is required on residential sanitary lines. Private sewage ejectors may be required, subject to Town review of hydraulic gradeline and basement depths.
- Underground power distribution with pad mounted transformers
- Street lighting
- Other services including telephone, cable TV, gas and fibre optic cables
- Water meters
- Joint use trenches
- Water sample stations
- Tree planting as per **Section 7.4 – Tree Planting**
- Extra conduit for future use

3.1.1 Right-of-Ways, Cul-de-Sacs

The right-of-way design specifications are contained in **Appendix B** of this document.

The preferred right-of-way width for local roads shall be 20 metres.

Cul-de-sacs shall be permitted when they are 150 metres or less in length measuring from the intersecting right-of-way to the end of the cul-de-sac.

Any concept plan pertaining to the undeveloped portions of the Lakeshore residential area west of the Colchester Hamlet can be developed subject to the approval of Council, even though the concept plan may not be consistent with the right-of-way policy of the Manual.

In addition, Council may consider allowing for a semi-urban standard, as depicted in **Figure CS 1B of Appendix B**, for development in this area.

For collector roads, right-of-way widths shall range between 20 and 22 metres depending on the anticipated traffic volumes.

For arterial roads, contact the Town of Essex.

3.1.2 Pavement Widths

The preferred pavement width for local roads shall be a minimum of 8.5 metres unless noted otherwise (measured between face of curbs).

The private road widths for condominium type developments shall also be between 7.3 and 8.5 metres, depending on the local development circumstances (measured between face of curbs).

For collector roads, the road pavement width shall range between 8.5 metres and 10 metres depending on anticipated traffic volumes.

For arterial roads, contact the Town of Essex.

The actual street pattern, street widths, including number of access locations, turning lanes, intersection signalization, shall be identified through a traffic study carried out by the Developer's Consulting Engineer or a Subconsultant experienced in traffic engineering.

Where provided, crosswalk pavement markings shall comply with the Manual of Uniform Traffic Control Devices for Canada and be slip resistant.

Developers are encouraged to contact the Town of Essex early in the process to determine whether a traffic study is required.

3.1.3 Minimum Turning Radius

Unless specifically noted otherwise, all intersection streets shall have a minimum radius (measured at curb face) of 9 metres. Cul-de-sacs shall have a minimum radius (measured at curb face) of 12 metres for residential areas and 15 metres for industrial areas. This includes temporary cul-de-sacs installed as a result of development phasing conveyance. Refer to **Figure CS-1D of Appendix B** for additional details.

3.1.4 Sidewalks, Bikeways, Walking Trails, Multi-Use Pathways

The Town of Essex requires that 1.5 metre wide sidewalks be located on both sides of all arterial and collector roads and on one side of all local roads. Notwithstanding this requirement, where a collector road forms part of the planned recreation-way for the Town of Essex, a hard surfaced bikeway/recreation-way with a minimum width of 2.44 metres (8.0 feet) shall be located on the side of the street opposite the sidewalk. Any other requirements for sidewalks will be noted in the Development Agreement. The Town of Essex encourages bikeways, walking trails, and multi-use pathways in all new developments. Must follow OTM Book 18+ Guidelines and Mandates.

3.1.5 Tactile Walking Surfaces, Crosswalks and Crossing Components

At intersections, a tactile walking surface shall have the following design features (Must follow OTM Book 18+ Guidelines and Mandates):

- Have the base surface level with the surrounding surface, or with its edges beveled and not more than 3mm above the surface to which it is applied
- Be slip-resistant
- Have any smooth adjacent walking surface smooth for at least 600 mm

Crosswalks shall have the following design features:

- Be at least 1800 mm wide between pavement markings (where provided)
- Have a running slope not steeper than in a ratio of 1:20 (5%)
- Have a cross slope:
 - Not exceeding 2% for crossings with stop control
 - Not exceeding 3% for crossings without stop control, or
 - In the case of mid-block pedestrian crossings, matching the street or highway grade, and
- Where crossing rail tracks at grade:
 - Be level and flush with the top of the rail at its outer edges
 - Be aligned with the top of the rail between the rails
 - Where possible, have wheel flange way openings not more than 64mm at non-freight rail tracks or 76 mm at freight rail tracks, and
 - Have tactile attention indicator surface, spanning the width of the pedestrian crossing and located so that the edge nearest the rail crossing is between 1800 and 4600 mm from the centreline of the nearest rail.

Pedestrian crossing components shall be located to:

- Limit exposure to vehicular traffic by following a line that is perpendicular to the vehicular route being crossed
- Be fully outside all motor vehicle and cycling lanes of the parallel roadway

- In the case of refuge islands and medians, where possible, have all components (e.g., curb ramps, blended transitions, crosswalk segments) in a single continuous lateral alignment; and,
- Have curb ramps or blended transitions
 - Lead people directly into the crossing area designated for pedestrian use; and
 - Be located at the side of the crosswalk furthest from the parallel vehicular roadway.

3.1.6 Roundabout Intersections

A roundabout intersection having a pedestrian route of travel shall:

- Have the pedestrian route alongside the roadway delineated from the vehicular route by curbs or other elements to preclude passage where a pedestrian street crossing is not intended
- At each approach roadway that intersects the pedestrian route, have a marked pedestrian crossing that:
 - Complies with section 3.1.5 of this manual
 - Is located at least 7.6 m from the circulation traffic lanes
- Have a tactile direction indicator surface to indicate the junction of a crosswalk and pedestrian route alongside the roadway, which:
 - Extends from the centreline of the ramp or blended transition across the full width of the pedestrian route alongside the roadway
 - Is 600 mm long
- For roundabout intersections with single-lane approach and exit legs, provide at each crosswalk a YIELD here to pedestrians sign that complies with the Manual of Uniform Traffic Control Devices for Canada
- At roundabouts with multi-lane pedestrian street crossings
 - Have entry and exit lanes of the roundabout separated by a splitter island
 - Have on the splitter island a channelized pedestrian route to ensure pedestrians follow the intended route
 - Have separate offset pedestrian crossings for entry and exit lanes of the roundabout
 - Have for each multi-lane segment of a pedestrian street crossing an accessible pedestrian signal (APS). Signals shall clearly identify which pedestrian street crossing segment the signal services

3.1.7 Driveways

Only one driveway per unit will be permitted for single unit dwellings, semi-detached dwellings and townhouse (multi-unit) developments. A separate driveway will not be permitted for a second dwelling unit. Two driveways may be permitted for commercial, industrial and institutional developments as determined through site plan control. Driveways will not be

permitted within site visibility triangles. In urban areas, the homeowner/builder will be required to hard surface the driveway apron (the area between the paved portion of the street and the front lot line) and the private driveway. However, driveway aprons nor the driveway itself shall exceed 7.62 metres (25 feet) in width and shall not be constructed sooner than one (1) year after completion of underground works located beneath the driveway and not later than two (2) years after the issuance of a building permit for the dwelling on the lot. If there is a sidewalk proposed to run through the driveway, the homeowner is required to only hard surface the area between the paved portion of the street and the limit of the sidewalk (partial apron). If the entire driveway is to be hard surfaced in advance of the sidewalk being installed by the Developer, the hard surfacing material must be concrete and a permit will be required to confirm appropriate grading. A permit may also be required from ERCA and/or the County of Essex if there is a potential impact to a regulated area or a County Road.

Refund of the required indemnity deposit submitted at the time of the building permit issuance will also be subject to the satisfactory completion of the hard surfacing of the driveway apron. The building permit applicant will be solely responsible for any necessary repairs to the sidewalk, concrete curb and asphalt road caused by the construction of the home abutting that lot, regardless of who caused the damage. This shall apply to all residential lots in registered plans of subdivision and other subdivision type development for which development agreements are required.

3.1.8 Potable Water Supply Protection

“Ontarians deserve access to clean, safe water.” This means keeping water free of pollutants and contaminants that could harm the environment and human health. The Government of Ontario is moving forward on a series of initiatives to preserve water quality, including new legislation, regulations, standards, and requirements.

The Town of Essex is obligated to provide a safe, reliable potable water supply to its customers. Working in that direction, the Town of Essex requires Developers to follow all government policies and regulations as well as local By-Laws and regulations. These regulations include:

- Environmental Protection Act
- Ontario Water Resources Act
- Clean Water Act
- Safe Drinking Water Act
- Drinking Water Systems Regulation
- Occupational Health and Safety Act and Regulations for Construction Projects
- Town of Essex By-Laws and other applicable regulations
- Essex Region Source Protection Plan

To determine if your property is in a vulnerable area and what policies apply, please use ERCA's online mapping tool or the MECP interactive mapping tool.

3.1.9 Backflow Prevention

The Town of Essex will require the installation of backflow prevention devices on all fire lines. Unless specifically allowed otherwise by the Town of Essex, all services larger than 19 mm shall have backflow preventive devices installed in an accessible location inside of the building, subject to the approved site plan. However, there may be times where a backflow prevention device will be required outside the building, at the discretion of the Town of Essex. Backflow prevention devices are required for all industrial, commercial, institutional (ICI) and multi-unit residential buildings and structures four stories and up. Backflow prevention devices may not be required for single occupancy, residential type buildings or small, single tenant commercial occupancy buildings (at discretion of the Town).

A single water service will supply water to the building from the municipal watermain and shall be equipped with an isolation valve at the property line or another location that is approved by the Town of Essex. The potable water line will be teed off of the single water service at the property line and will be equipped with an isolation valve, a backflow preventer and a water meter. The single water service line will be equipped with a backflow preventer to be located within the building and shall serve as the fire protection water line.

The location of the water meter on the potable water line will be at the discretion of the Town of Essex.

These appurtenances for industrial, commercial, institutional (ICI) development shall be paid for and maintained at the Developer's expense, according to the requirement of the Town of Essex. All water meters are supplied by the Town of Essex and must be placed in a location sufficient for remote reading capability.

3.1.10 Fire Protection

The fire protection water line will be used solely for firefighting purposes. In some cases, fire lines will be required to be metered, unless the Developer can demonstrate that water cannot be used for any purpose other than firefighting. Fire hydrant locations and spacing shall be approved by the Town of Essex, and must have a maximum spacing of 150 metres. Generally, fire hydrants should be located at intersections and adjacent to gaps in central boulevards. Otherwise, fire hydrants should be located near side property lines. On private property, fire protection appurtenances and fire hydrant maintenance shall be paid for and maintained at the Owner's (deed holder's) expense, according to the requirement of the Town of Essex.

3.1.11 Elevation Certificates

Elevation certificates will be required at 2 distinct times of residential development, including:

1. **Foundation Wall Elevation Certificate** will be required from a registered Ontario Land Surveyor (OLS) for all residential Development lots. A registered Ontario Land Surveyor is required to record, verify, and sign-off an elevation certificate to confirm elevations at top of foundation wall, prior to any further construction atop the foundation (framing, masonry etc.) for all development within a plan of subdivision.

Failure to submit Foundation Wall Elevation Certificate prior to building framing, deems building permit no longer valid.

2. **Lot Grading Elevation Certificate** will be required from a registered Ontario Land Surveyor (OLS) for all residential Development lots. A registered Ontario Land Surveyor is required record, verify, and sign-off an elevation certificate to confirm elevations of the main building opening, percent slope of front yard/rear yard/side yard, property corner elevations, and rear yard catch basin rim elevation, for all development within a plan of subdivision. ***Failure to submit verified lot grading elevation certificate will deny approval of occupancy permit.*** Lot Grading Elevation Certificate is available in **Appendix F** of this manual, and available from the Town of Essex.

All new developments (regardless of previous land use, and abutting property land uses) must be in harmony with adjacent lands. It is the responsibility of the Developer and their Consulting Engineer to ensure that there are no negative impacts on adjacent lands regarding lot grading, erosion, and drainage.

Administered by the Chief Building Official – failure to adhere to these terms will result in mandatory remediation, approved by the Town of Essex, by the Builder/Developer infringing on these terms.

3.1.12

Development in Close Proximity to Railways

Developers are to note the following procedures and requirements that the Town of Essex will require for all developments abutting or in close proximity to railway right-of-ways:

- Developer shall obtain written comments from the Railway Company and submit a copy of the railway's comments to the Town of Essex
- Developer shall address safety issues in case of train derailments. These safety issues shall include setbacks, safety berms or other safety measures in the design
- Developer shall complete a noise and vibration study. This study shall provide site specification recommendations
- Developer shall address trespass issues
- Developer shall obtain and pay for permissions and specifications required for utilities crossing railway right-of-ways

Notwithstanding any other requirements, the Developer must comply with the Railway's principal main line requirements.

All infrastructure works shall be the property of the Developer (and subsequent property owners), who shall maintain these infrastructure works in a good state of repair in perpetuity and cause no changes to be made (wear and tear excepted) and save and except for those replacement upgrades as may be required by the Town and/or Railway Company from time to time acting reasonably. All purchase and sale agreements shall clearly state that property owners are responsible for maintenance and repair of these facilities as directed by the Railway Company and the Town of Essex. In the event that the property owner fails to be in compliance with this requirement, the Town shall reserve the right to perform such maintenance/replacement at the cost of the property owner and such costs may be collected by the Town in the same manner as taxes. The Developer (and subsequent property owners) shall, further to this requirement, grant easements in favour of the Town of Essex and the Railway Company, to enable inspection and ensure compliance with this requirement from time to time. All purchase and sale agreements shall clearly state this requirement and shall require a written acknowledgment from the purchases of these requirement and agreeing that such property owners are responsible for maintenance, repair and replacement thereof as may be required.

All works necessary to meet the railway requirements must be installed prior to the issuance of any building permit for a dwelling that is within 300 metres of the rail right-of-way.

Noise barrier walls shall be constructed from decorative or plain precast concrete panels or such other materials and in such manner as set out in a noise or noise and vibration emission mitigation plan approved by the Town prior to the execution of a site plan control agreement, where required, or the issuance of building permits. Safety berms required by the Railway Company shall have minimum side slopes of 3:1 and minimum 2.5 meter top width unless otherwise specified by the Railway Company. Future maintenance of the berm and wall and their replacement shall be the responsibility of the property owner, who shall maintain the berm and wall in good practise.

3.1.13

Development in Close Proximity to Waterfront, Environmentally Sensitive Areas

Notwithstanding any other provision of the By-laws of the Town of Essex, no person shall hereafter erect any permanent or temporary building or structure, including a swimming pool, other than a building or structure associated with drainage works or for protection against flooding and erosion in any zone within the stipulations outlined in the Zoning By-law. This includes all ERCA regulated areas, and a permit / clearance from ERCA may be required. For more information, please refer to the County of Essex Official Plan and Schedules, Town of Essex Official Plan and Schedules, ERCA online mapping tool, Town of Essex online mapping tool, and the 2020 PPS.

Where new developments are allowed in shoreline communities, strong consideration should be given to maintaining/establishing vegetation to mitigate shoreline erosion prior to any new development. The most successful and least costly approach to dealing with erosion problems on shorelines involves mimicking nature's own design and using native vegetation as much as possible.

Soft armoring techniques (sometimes called bio-engineering) involves creating a naturally occurring slope with a combination of natural elements which includes rock and vegetation.

Soft techniques will absorb the energy of the waves along the shoreline, which reduces erosion, strengthens the shoreline, prevents ongoing maintenance, enhances the natural habitat, filters nutrients and pollution from upland runoff, and helps improve water quality.

The following options should be considered as soft armoring solutions to protecting shorelines:

- **Logs and Rocks:** When trees fall onto a bank or into the water, it acts as a nursery for many plants and wildlife species as it decays. It also helps to stabilize the shoreline and bank by obstructing the movement of runoff and the action of waves on the shore. By placing logs in strategic locations, it can help protect the shoreline in a natural looking manner. By placing rocks in strategic locations, it can help protect banks at drainage outfalls or gullies, break the force of waves and provide shelter for fish and other wildlife.
- **Live Staking:** This method can be done by taking woody plants that are native to the area and driving them into the dirt or substrate of the eroded area so they can sprout roots and grow. Live staking is relatively low cost and can be easily done by the landowner.
- **Brush Mattress:** A brush mattress consists of a thick (15 to 30 cm) blanket of living cuttings and soil fill that is placed on a stream bank or lake shore to simultaneously re-vegetate and armor the bank. This method works well on badly eroded slopes, as the dense layer of brush increases roughness and protects the bank from scour. As the live branches root and grow, they provide cover and reinforcement for the soil underneath. If these mats are used on stream banks, they trap sediments during high water, and eventual plant growth will enhance aquatic habitat.
- **Vegetated Rip-Rap:** Vegetated rip-rap combines the rock revetment techniques with vegetative techniques. It consists of a layer of stone or boulder armoring that is vegetated using pole planting, brush layering and live staking. This technique works best for waterways or inland lakes where continuous and resistive bank protection measures are needed. Plants incorporated into the riprap will create a more natural look to the shoreline as well as create habitat for aquatic and terrestrial wildlife.

Depending on the development in proximity to the shoreline, soft armoring techniques alone may not provide the long-term erosion protection needed to obtain a permit. During pre-consultation discussions, the proponent shall present grey and green solutions where

applicable for review by the Town of Essex and the applicable regulatory authority (i.e. ERCA). If green LID solutions are not feasible or sufficient, the proponent shall display reasoning and research to determine this.

3.1.14 Storm Drainage Systems Maintained Under the Drainage Act

It is the policy of the Town of Essex that ratepayers who benefit directly from municipal services shall pay the cost to operate and maintain these municipal services. As such, the Town of Essex recognizes that storm drainage systems in particular, provide benefit to a limited service area. Therefore, unless noted otherwise in the Development Agreement, Developers will be required to:

- Agree that the storm drainage system, including sewers, pumping stations and stormwater management systems, may be incorporated into a municipal drainage report at the Developer's expense, for assessment of future maintenance and operating costs.
- Agree to incorporate adequate language in all Purchase/Sale Agreements of the lots, including setbacks from municipal drains, acknowledgement from the purchaser that the storm drainage system is part of a municipal drain pursuant to the Drainage Act and that the purchaser will not object to any costs assessed to the property under the requirements of the Drainage Report.
- Provide setbacks from municipal drains on drawings and PDC sheets.

3.2 Residential Sites

3.2.1 General

The general requirements of **Subsection 3.2** shall apply and govern except as amended or extended herein.

3.2.2 Semi-Urban Developments

Notwithstanding that it is the policy of the Town of Essex to require curb and gutter on all new streets, the Town of Essex may consider reducing the municipal standard for new developments abutting existing developments that have been developed to semi-urban standards (no curb and gutter).

This special relief will require a Council resolution, and Developers are encouraged to obtain Council approval early in the development process. As a guide to Developers, Council will consider the following factors in granting this exemption:

- Specific locations designated in the Official Plan to permit residential development in semi-urban settings.
- The relative size of the proposed development and other adjacent lands that are designated for residential development in the Official Plan. The smaller the new development is in

comparison to the neighbourhood, the more likely semi-urban development will be permitted.

- The size of the lots. Generally, estate size lots (frontages of 30 metres or more) are candidates for semi-urban development.
- The adequacy of downstream storm sewer outlets. Less than desirable storm sewer outlets support semi-urban construction.
- The absence of sanitary sewers.

3.2.3 Road Classification

Arterial streets are defined by the Town of Essex as part of a traffic study. Contact the Town of Essex for details.

Collector residential streets will be defined in the Development Agreement and are streets that provide the major or access and egress point to the development in the area. These streets will be the major access route for firefighting and emergency service vehicles to the development and will generally indirectly service more than 200 residential units. The estimated minimum annual average daily traffic (AADT) when the site and surrounding area is developed would be 1000.

Collector roads may have restricted and/or controlled access. All other residential streets are classified as local residential streets.

3.2.4 Driveways

All residential driveways shall have a hard or permeable surface from curb and gutter or pavement edge (except for semi-urban developments), to the property line or easement line, whichever is farthest from the street. Acceptable hard surface driveway materials are asphalt and concrete. Acceptable permeable surfaces include the following:

- **Porous Asphalt:** A hot-mix asphalt with a reduced amount of sand or fines, which allows for increased interconnected pore space for water to drain through the pavement into a crushed stone reservoir and base. To maintain proper infiltration rates through the paving layer, the amount of asphalt binder in the mix must be minimized to prevent clogging of voids.
- **Pervious Concrete:** The design of pervious concrete differs from standard concrete because the fines have been removed from the concrete mix and different cementitious materials and chemicals have been added, such as fly ash and air entraining agents. The finished product will look similar to conventional concrete, except it typically has a rougher surface and allows for infiltration into the ground. Pervious concrete is also available in precast concrete panels that are placed together on site.

Please note that the above permeable surface options are only a few examples, and the consultant should be diligent in evaluating other permeable pavement options, in consultation with the Town of Essex.

Generally, permeable pavement is recommended for low-volume and low-speed applications with limited turning traffic. The use of permeable paving can potentially reduce the size and extent of downstream stormwater collection, conveyance and detention.

Developments are subject to runoff review by the Town of Essex, and may be subject to compensate for increased runoff by physical or financial means on individual or full development sites.

3.2.5 Condominiums

In Condominium type development where the Town of Essex will not assume the roadway and other services, the development standards shall be established in the corresponding Site Plan Agreement.

3.3 Commercial Sites

3.3.1 General

The general requirements of **Subsection 3.1** shall apply and govern except as may be extended or amended herein.

3.3.2 Storm Water Management Facilities

Should Developers use the parking areas as temporary ponds to store storm water, the maximum depth of ponding for a 1:100 year storm (major system) shall be 300 mm. For a 1:5 year storm (minor system), the hydraulic grade line (HGL) shall be maintained below ground elevations.

More stringent HGL requirements may be required at the discretion of the Town of Essex and/or ERCA based on known flooding issues or other site-specific conditions.

LID stormwater control measures are strongly encouraged when developing commercial sites. LID examples for commercial use include bioretention systems, bioswales, rain gardens, green roofs, and interlocking concrete pavers. Rainwater harvesting systems for commercial use should be large pre-fabricated cisterns, which can range from 750 to 40,000 litres in size.

Commercial sites are likely to provide a large number of parking spots. It is recommended that planting areas be used as small scale LID units to capture and treat a portion of the parking lot runoff through filtration and infiltration.

3.4 Industrial Sites

3.4.1 General

The general requirements of **Subsection 3.1** shall apply and govern except as may be extended or amended herein.

3.4.2 Roads

The minimum road width shall be 10 metres measured between face of curbs (right-of-way widths determined by Town, site specific). A geotechnical investigation defining the pavement cross section parameters is mandatory.

The intersection turning radius shall be 15 metres. A cul-de-sac radius, if permitted, shall be 15 metres.

3.4.3 Storm Water Management Facilities

Should Developers use the parking areas as temporary ponds to store storm water, the maximum depth of ponding for a 1:100 year storm (major system) shall be 300 mm. For a 1:5 year storm (minor system), the hydraulic grade line (HGL) shall be maintained below ground elevations.

More stringent HGL requirements may be required at the discretion of the Town of Essex and/or ERCA based on known flooding issues or other site-specific conditions.

Loading ramps are not permitted to be used as a stormwater management facility, however a maximum depth of 300mm is permitted for major systems, as some depth is inevitable based on their typical low elevation and the hydraulics of the system.

3.5 Institutional Sites

3.5.1 General

The general requirements of **Subsection 3.1** shall apply and govern except as may be extended or amended herein.

3.5.2 Storm Water Management Facilities

Should Developers use the parking areas as temporary ponds to store storm water, the maximum depth of ponding for a 1:100 year storm (major system) shall be 300 mm. For a 1:5 year storm (minor system), the hydraulic grade line (HGL) shall be maintained below ground elevations.

More stringent HGL requirements may be required at the discretion of the Town of Essex and/or ERCA based on known flooding issues or other site-specific conditions.

3.6 Recreational/Park Sites

3.6.1 General

The general requirements of **Subsection 3.1** shall apply and govern except as may be extended or amended herein. All parkland must be fine graded and hydro-seeded by the Developer within 12 months of acceptance of the abutting services on maintenance. A minimum 75% consistent germination is required as determined by the Town of Essex. All park sites abutting residential shall be fenced to the satisfaction of the Town of Essex.

3.6.2 Parking and Access Areas

All parking areas and access areas shall be hard surfaced with asphalt, concrete or paving stones to control dust and provide adequate drainage

3.6.3 Storm Water Management Facilities

All play areas or passive areas used for stormwater storage should only contain infrequent flood events, yet serve as a recreational land for the majority of the time. Surface ponding in parkland should be limited to storms meeting the minor 5-year storm, or greater, at the discretion of the Town of Essex. Proponents are advised that lands serving as a storm water storage area or other storm water management facility are not deemed to form part of a parkland dedication mandated under subsection 1.6, **Parkland Dedication, Acquisition Fees and Development**, of this Manual.

Suitable LID stormwater control measures are also encouraged on recreational sites, including (but not limited to) bioretention, bioswales and rain gardens.

Consideration should also be given to developing natural and constructed shade, as well as water filling stations on public property such as parks, community centres, and splash pads.

3.7 Greenhouse Developments

3.7.1 General

By law, to operate a greenhouse in Ontario, you must:

- Get a Permit to Take Water, if you take more than 50,000 litres of water of any given day from a lake, stream, river, pond or groundwater source
- Get approval from the Ministry of the Environment, Conservation and Parks to discharge sewage, including storm water, process water and sanitary sewage
- Get approval to use, operate, establish, alter, extend or replace new or existing sewage works
- Properly store and handle pesticides

- Hold a pesticide license or certificate such as the Greenhouse/Interior Plant exterminator license or Grower Pesticide Safety Grower Certificate to apply certain pesticides

3.7.2 Site Plan

Site plans for greenhouses must show the following items, at minimum:

- Adherence to all local by-laws regarding odour and light pollution requirements
- Dimensions of the property
- Location and size of all buildings (existing and proposed)
- External doors and accesses, entrances, driveways, parking areas
- Loading and truck movement areas
- Outdoor storage areas, central storage and collection areas for waste materials under the Environmental Protection Act (if permitted)
- Outdoor lighting
- Signage
- Supplementary housing facilities
- Landscaping
- MTO corridor restrictions (if any)
- SWM facilities
- Fuel storage facilities

All lighting specifications are subject to approval by the Town of Essex. The setback from property line to the top of the bank of any swale for maintenance access purposes shall be 2.0m or as otherwise approved by the Town of Essex.

3.7.3 Stormwater Management

As outlined in the Town of Essex Official Plan, stormwater management will generally be required for greenhouse development, to ensure runoff is controlled in such a manner that development does not increase peak flows and that potential pollution is mitigated, typically on site, to address potential negative and adverse effects downstream or into Lake Erie.

The Town of Essex will require developers to undertake stormwater management studies and works pursuant to the legislation, guidelines and municipal standards in effect in order to address these issues. Stormwater management plans, acceptable to the Town of Essex, Essex Region Conservation Authority (ERCA) and Ministry of the Environment, Conservation and Parks (MECP), will be required in advance of Site Plan Control (SPC) approval.

3.7.4 Wastewater Management

Where a private sewage system with a daily design flow of less than 10,000 l/day is required, an application for a permit must be obtained from the Building Department and design shall be as required by the Ontario Building Code. Private sewage systems exceeding the daily design flow

of 10,000 l/day require a Certificate of Approval from the Ministry of the Environment, Conservation and Parks (MECP).

3.7.5 Construction Plans

Greenhouses are classified as Part 4 structures under the Ontario Building Code and as such are required to be designed by a Professional Engineer. Structural plans, showing the design of footings and the greenhouse structure, stamped by a Professional Engineer, must be submitted along with the Permit application.

3.7.6 Inspection Requirements

The Developer's Engineer shall conduct reviews of each stage of construction as specified at the time of Building Permit Issuance. Copies of the reports arising from these reviews must be submitted to the Building Department within 48 hours of the Engineer's visit to the site.

The Town of Essex may conduct periodic inspections where there is a stormwater outlet to a municipal drain.

3.7.7 Parking and Access Area Requirements

The portion of the entrance that is within the municipal right-of-way shall be hard surfaced to the satisfaction of the Town of Essex prior to commencement of construction.

The location of the driveways, parking areas and the extent of the hard surfacing required must be addressed in the Site Plan.

3.8 Indemnity Deposits

Developers shall either pay for or arrange to have the lot purchaser deposit indemnity fees at the time building permits are issued. These fees are to ensure that:

- Agreed to work is completed, including rear yard drainage
- Any damage to the municipal infrastructure is repaired at the purchaser's expense
- All streets are kept cleaned
- Any standing water is drained
- All weeds are cut
- Dust from the site is controlled
- Driveway approaches are constructed
- Water meter is installed and inspected
- Location of municipal service connections is submitted
- Service connections are in working order (water valve, metal caps on cleanouts, etc.)
- As-built Drawings are submitted, if required

The Developer should contact Public Works (PW) for inspections at least 24 hours prior to installing the driveway, and the Town of Essex for the value of the current indemnity deposit. The indemnity deposit will be returned in part or in full at the time that all the conditions are satisfied and a final inspection is completed and deficiencies list is cleared.

3.9 **Transportation Policy Guidelines**

The Transportation Policy Guidelines are applicable to non-residential development only. They consist of Parking, Walking and Cycling, Road Classification, and Subdivision Design. These Policy Guidelines are available upon request at the Town of Essex.