



# **CHATHAM-KENT DEVELOPMENT STANDARDS**

# Table of Contents

---

<b>1.0</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	General Definitions .....	1
<b>2.0</b>	<b>DEVELOPMENT REQUIREMENTS PRIOR TO CONSTRUCTION</b>	<b>3</b>
2.1	General.....	3
2.1.1	Pre-application and Complete Application Requirements.....	3
2.1.2	Plans.....	4
2.1.3	Lot Creation .....	5
2.1.4	Parkland Dedication .....	5
2.1.5	Allocation and Phasing of Services .....	5
2.1.6	Endangered Species Act, 2007 .....	6
2.1.7	Professional Services .....	6
2.1.8	Studies and Reports.....	7
2.1.9	Design Drawings .....	7
2.1.10	Specifications and Special Provisions .....	8
2.1.11	Insurance and Indemnification.....	8
2.1.12	Performance .....	8
2.1.13	Delayed Work .....	9
2.1.14	Easements and Right-of-Ways.....	9
2.1.15	Development Charges .....	9
2.1.16	Oversizing and Off-Site Costs .....	10
2.1.17	Multi Lot Creation by Consent.....	11
2.2	Subdivisions/Condominiums.....	11
2.2.1	Approvals.....	11
2.2.2	Subdivision Agreement.....	11
2.2.3	Maintenance.....	12
2.2.4	Phasing.....	12
2.2.5	Pre-Construction Meeting .....	12
2.3	Other Site Developments.....	13
2.3.1	Approvals.....	13
2.3.2	Agreements .....	13
2.3.3	Maintenance.....	14
2.3.4	Pre-Construction Meeting (for Off-Site Works Only) .....	14

<b>3.0</b>	<b>GENERAL REQUIREMENTS DURING AND IMMEDIATELY AFTER CONSTRUCTION</b>	<b>15</b>
3.1	General.....	15
3.1.1	Public and Agency Notifications .....	15
3.1.2	Consultants Inspections and Quality Assurance Testing Services .....	15
3.1.3	Municipal Inspection and Acceptance.....	16
3.2	Subdivisions/Condominiums.....	17
3.2.1	Municipal Inspection .....	17
3.2.2	Maintenance Period .....	17
3.2.3	Clean-up.....	17
3.2.4	Lot Servicing Sheets / Registered Lot Creation Drawings .....	18
3.2.5	Record Drawings.....	18
3.2.6	Model Homes .....	18
3.2.7	Building Permit Issuance .....	19
3.2.8	Indemnity Deposits.....	19
3.3	Other Site Developments.....	20
3.3.1	Works in Right-of-Way - Maintenance Period.....	20
3.3.2	Clean-up.....	20
3.3.3	Building Permit Issuance .....	20
3.3.4	Record Drawings for Off-Site Works .....	21
<b>4.0</b>	<b>INFRASTRUCTURE DEVELOPMENT REQUIREMENTS</b>	<b>22</b>
4.1	General.....	22
4.1.1	Right-of-Ways, Cul-de-Sacs.....	22
4.1.2	Pavement Widths .....	23
4.1.3	Minimum Turning Radius .....	23
4.1.4	Sidewalks, Bikeways, Walking Trails, Multi-use Pathways .....	23
4.1.5	Driveways .....	23
4.1.6	Development in Close Proximity to Railways .....	24
4.1.7	Development in Close Proximity Waterfront, Environmentally Sensitive Areas .....	24
4.1.8	Potable Water Supply Protection .....	24
4.1.9	Indemnity Deposits.....	25
4.1.10	Parking and Access Areas .....	26
4.1.11	Stormwater Management Facilities .....	26
4.2	Residential Sites .....	26
4.2.1	General .....	26
4.2.2	Semi-Urban Developments .....	26
4.2.3	Road Classification.....	26

4.2.4	Driveways .....	27
4.2.5	Condominiums.....	27
4.3	Commercial Sites.....	27
4.3.1	General .....	27
4.3.2	Parking and Access Areas .....	27
4.3.3	Stormwater Management Facilities .....	27
4.4	Industrial Sites Urban.....	27
4.4.1	General .....	27
4.4.2	Roads .....	27
4.4.3	Parking and Access Areas .....	28
4.4.4	Rural Industrial Sites.....	28
4.5	Institutional Sites .....	28
4.5.1	General .....	28
4.5.2	Parking and Access Area.....	28
4.6	Recreational / Park Sites .....	29
4.6.1	General .....	29
4.6.2	Parking and Access Areas .....	29
4.6.3	Stormwater Management Facilities .....	29
4.7	Transportation Master Plan .....	29
<b>5.0</b>	<b>DESIGN CRITERIA</b>	<b>30</b>
5.1	General.....	30
5.2	Roads.....	30
5.3	Sidewalks.....	30
5.4	Watermains.....	30
5.5	Sanitary Sewers.....	30
5.5.1	Private On-site Wastewater Treatment Facilities .....	31
5.6	Storm Sewers / Drainage .....	31
5.6.1	Stormwater Management Facilities .....	32
5.6.2	Stormwater Pumping Station Design- .....	33
5.7	Sanitary Pumping Stations .....	34
5.7.1	Site Selection .....	34
5.7.2	Regulatory Requirements and Submittals.....	35

<b>6.0</b>	<b>STREET LIGHTING, POWER DISTRIBUTION AND OTHER SERVICES</b>	<b>36</b>
6.1	General Lighting Notes.....	36
6.2	Power Distribution .....	37
6.3	Other Services .....	37
6.4	Light Intensity Standards .....	37
6.4.1	Submission Requirements for Outdoor Lighting .....	38
<b>7.0</b>	<b>CONSTRUCTION SPECIFICATIONS PACKAGE – TENDERING</b>	<b>39</b>
7.1	General.....	39
7.2	Ontario Provincial Standard Specifications.....	39
7.3	Municipal Specifications .....	39
<b>8.0</b>	<b>DRAWINGS</b>	<b>40</b>
8.1	General.....	40
8.2	File Formats - CAD.....	40
8.3	Drawing Details .....	40
8.4	Layers .....	40
8.5	Elevation Data .....	40
8.6	Documentation .....	41
8.7	Text and Annotation .....	41
<b>9.0</b>	<b>MISCELLANEOUS</b>	<b>42</b>
9.1	Signs .....	42
9.2	Barriers and Guard Rails.....	42
9.3	Pavement Markings .....	42
9.4	Community Mailboxes .....	42
9.5	Tree Planting .....	43
9.6	Utility Corridors.....	43
<b>10.0</b>	<b>AGENCIES, APPROVALS, AND NOTIFICATIONS</b>	<b>44</b>

#### Tables

Table 1:	Storm Sewers / Drainage Design Criteria .....	31
Table 2:	Agencies, Approvals, and Notifications .....	44

## Appendices

---

[Appendix A Process Flow Charts](#)

[Appendix B Roads, Stormwater and Illumination Specifications & Details](#)

[Appendix C Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual](#)

[Appendix D Species at Risk Technical Memo](#)

[Appendix E Guidelines for Professional Engineers Providing Land Development Services](#)

[Appendix F Lot Servicing Sheets](#)

[Appendix G Chatham-Kent Driveway Access Policy](#)

## Digital Information Standards

---

**[Chatham-Kent CADD Standards and INFOsheet](#)**

## Transition Policy

The policies and requirements in this Development Manual shall take effect within 90 days of the date of the amendment, noted as a footer on each page. For any current Subdivision Agreements the requirements of those conditions of the Subdivision Agreements shall apply. For any future phases, the requirements of this Development Manual shall apply unless superseded by a new Subdivision Agreement.

This current version of the Development Standards is Version 1.0 amended herein on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Changes to Version 1.0 from the previous document named V 1.0 include:

## 1.0 **INTRODUCTION**

In an effort to streamline the development process, the Corporation of the Municipality of Chatham-Kent has consolidated its development requirements in this Development Manual.

This manual will be updated from time to time. Users shall confirm with the Municipality of Chatham-Kent that this is the most up-to-date version prior to making use of the contents of this manual.

Throughout the remainder of this document, the Corporation of the Municipality of Chatham-Kent will be referred to as Chatham-Kent.

This Development Manual also refers to Ontario Provincial Standard Drawings (OPSD) and Ontario Provincial Standard Specifications (OPSS). Unless noted otherwise in the Transition Policy of this manual, the latest edition of these documents applies.

Provincial or Federal requirements shall supersede the requirements of this manual. As well, it is not intended to conflict with the requirements of other agencies including, but not limited to, the Lower Thames Valley Conservation Authority (LTVCA), St. Clair Region Conservation Authority (SCRCA), Essex Region Conservation Authority (ERCA), Entegrus, Hydro One, Union Gas, Bell Canada and Cogeco. Kindly report any conflicts to Chatham-Kent.

It is hoped that Chatham-Kent's development community will find this a useful document. Any suggestions on improving this manual should be forwarded to Chatham-Kent's Infrastructure and Engineering Services Division.

### 1.1 **General Definitions**

**Owner** – Owner or designated agent of the property for proposed development

**Subdivision** – an area of land divided into plots for sale

**Condominium** – a building or complex of buildings containing a number of individually owned apartments or houses established under the Condominium Act

**Multi-Residential Unit** – classification of housing where multiple separate housing units for residential inhabitants are contained within one building or several buildings within one complex

**Acceptance** – following a technical review, Chatham-Kent accepts privately constructed utilities and roadway as being constructed to the Municipal standards

**Assumption** – following acceptance, a Municipality assumes the utilities and roadway (with conditional maintenance period), the Municipal right-of-way and associated utilities become Municipal property

**Contractor** – an independent entity that undertakes/enters a contract to furnish certain number or quantity of goods, material, equipment, personnel, and/or services that meet or exceed stated requirements or specifications, at a mutually agreed upon price and within a specified timeframe to another independent entity called contractee, principal, or project owner

**Engineer** – a Professional Engineer registered under the Professional Engineers' Act of Ontario (hereinafter called the "Engineer") The Engineer may be employed by a consulting firm, or consist of multiple engineers responsible for their specific expertise related to the design of development



**Professional Service** – May be an Engineer, and/or may consist of a professional company or consultant with expertise in the specific field of question (ie. – Environmental assessment by environmental specialist)

**Abutting Property** – includes two or more parcels of land in which there are not intervening pieces of land between property lines of the abutting parcels

**Phased Development** – also can mean staged, in reference to development of lands that are intended to be parts of single development that may require processes of application, approval, design, and construction to be split or combined in terms of timelines and documentation

**Works** – describe and include any physical aspect within development, new or existing, pertaining to infrastructure

## **2.0 DEVELOPMENT REQUIREMENTS PRIOR TO CONSTRUCTION**

### **2.1 General**

If the owner chooses to designate an agent who will represent the owner in their dealings with the Chatham-Kent, they are to do so by notifying the Chatham-Kent in writing.

#### **2.1.1 Pre-application and Complete Application Requirements**

The Chatham-Kent Official Plan sets out the objectives and policies to guide the short-term and long-term physical development of all lands within Chatham-Kent. The Chatham-Kent Zoning By-law specifically establishes and regulates the use of land by implementing the policies of the Official Plan. The Official Plan contains policies requiring pre-application meetings and complete applications.

A pre-application consultation meeting is required for any contemplated development needing:

- a) an amendment to the Official Plan
- b) an amendment to the Zoning By-law (including a Temporary Use by-law)
- c) approval of a Site Plan
- d) approval of a Draft Plan of Subdivision or Plan of Condominium

A pre-application consultation meeting is not required, but it is recommended for any contemplated development needing:

- a) a Consent to sever
- b) a Minor Variance
- c) any other application under the Planning Act

For an application to be considered complete within the meaning of the Planning Act, all applications must submit the following:

- a) The prescribed fee
- b) A signed application form, completed in full
- c) Any additional items required on the application form
- d) Information required by the Planning Act or the associated regulations
- e) Information or material required by other sections of this Plan

Applications for amendment to the Official Plan, amendment to the Zoning By-law, consent to sever, approval for a draft plan of subdivision, approval of a plan of condominium or approval of a site plan must include the submission of supporting information identified in the pre-application consultation process, which may include studies or reports to address the following matters:

- a) Planning Justification
- b) Infrastructure and servicing
- c) Stormwater management
- d) Transportation, traffic and parking
- e) Cultural heritage
- f) Archaeological resources
- g) Natural environment
- h) Contaminated or potentially contaminated sites
- i) Soil test and groundwater quality
- j) Nuisance, noise hazard or safety issues
- k) Urban design
- l) Market impact

- m) Financial impact
- n) Other studies or reports identified through the pre-application consultation

The list of supporting information, above, does not preclude Chatham-Kent or its delegated approval authorities from requiring other supporting information in order for an application to be deemed complete. Chatham-Kent may require further information after the pre-application consultation has occurred in response to new circumstances that may impact the decision-making process. The terms of reference for supporting information, including any scoping of studies, will be as directed by Chatham-Kent.

All supporting information must be prepared by a qualified professional retained by and at the expense of the Owner. Chatham-Kent may refuse to accept the supporting information if the quality of the submission is unsatisfactory or it fails to adequately address the established terms of reference.

Chatham-Kent may require a peer review of any supporting information by an appropriate agency or qualified professional at the expense of the Owner. Receipt of the peer review is not required for an application to be deemed complete.

Chatham-Kent may require electronic and hard copy versions of supporting information to be submitted in an acceptable format.

Chatham-Kent may require Owners who amend development applications to participate in one or more additional pre-application consultation meetings, and may require the submission of revised or additional information before Chatham-Kent will consider the amended application complete under the Planning Act.

Chatham-Kent will issue a notice of a complete application in accordance with the Planning Act.

Owners wishing to pursue a development application should contact the Planning Services Division to arrange for a Pre-Application meeting.

### 2.1.2 Plans

All draft plans shall be drawn to scale with prescribed scale labelled accordingly. The boundaries of the Development shall be staked and certified by an Ontario Land Surveyor. A reproducible copy of the plan shall be submitted. Electronic copies are also required (AutoCAD format in projection NAD83 UTM Zone 17 and PDF, please confirm AutoCAD Version with Chatham-Kent). The draft plan shall also show sufficient ground elevations, referenced to geodetic elevations, to identify the drainage patterns. Physical features of the site and abutting lots should be shown. These physical features include drainage ditches, flow direction, swales, municipal drains, trees, poles, roads, shorelines, buildings, etc.

Draft plans contain specific design features that require review and approval by various agencies and governing bodies (i.e. 'Development in Proximity to Railways').

These agencies and their approval responsibilities are outlined in **Table 9 of Section 10 – Agencies, Approvals, and Notifications**. A flow chart illustrating Chatham-Kent's policy in approving draft plans can be found in [Appendix A – "Process Flow Charts"](#). The requirements for design and servicing drawings are described in **Subsection 2.1.9**.

### 2.1.3 Lot Creation

A plan of subdivision shall generally be required:

- a) where a new road or extension to an existing road is required; or
- b) where more than five lots are to be created and/or the owner is retaining sufficient lands for the development of additional lots; or
- c) where Chatham-Kent deems it necessary for the proper development of the lands.

A consent will only be considered where a plan of subdivision is deemed by Chatham-Kent to be unnecessary, and where the application conforms with the policies of the Official Plan.

Owners will be required to pay park fees in accordance with Chatham-Kent's Park Fee Policy.

Owners shall contact Chatham-Kent for information regarding the current policy and payment of fees.

### 2.1.4 Parkland Dedication

In accordance with the Planning Act and the Chatham-Kent Official Plan, as a condition to any development or redevelopment approval, Chatham-Kent may require that land in an amount not exceeding 2% for commercial or industrial purposes and in an amount not exceeding 5% of developable lands or one hectare per 300 permitted dwelling units, whichever is greater, be conveyed to Chatham-Kent for park or other public recreation purposes and/or more specifically:

- a) That at least one Neighbourhood Park (minimum 2.0 ha) be required per 5,000 new residents, or
- b) One Community Park (minimum 4.0 ha) be required per 15,000 new residents;
- c) That new parkettes or small parkland dedication of less than 0.5 ha be discouraged, unless the community demonstrates a strong need for a commemorative park venue at the time of dedication, and
- d) As an alternative, Chatham-Kent may take cash in lieu of lands dedicated for parkland purposes (condition of approval). The value of the land shall be determined as of the day before the day that the planning approval was given. All moneys received as cash in lieu of land conveyance shall be paid into a special account and spent only for the acquisition of land, the erection of buildings and other structures, or the acquisition of equipment and machinery required for park and other recreational purposes.

Open space linkages may also be required to link parks and neighbourhoods.

### 2.1.5 Allocation and Phasing of Services

To ensure that the proper allocation and phasing of municipal services proceeds in a fiscally sustainable and cost-effective manner, it is the policy of Chatham-Kent that development proposals will be accompanied by a servicing review conducted by the Owner in consultation with Chatham-Kent.

When sewage treatment servicing capacity does not exist for a proposed development, Chatham-Kent will defer the processing and granting of conditional draft approval of the planning application until sufficient uncommitted reserve treatment capacity is available, or until a construction contract is awarded for the creation of the needed treatment capacity, and a servicing agreement and securities are in place to ensure that such treatment capacity will be available to service the development within one year of the granting of conditional draft plan approval. Draft-approved plans

of subdivision may only proceed to final approval and registration if sufficient uncommitted reserve treatment capacity continues to exist.

The following factors in establishing the phasing of development proposals in Primary and Secondary Urban Centres shall be considered:

- a) The logical extension of municipal services that avoids, where possible, large undeveloped tracts of land between the existing developed area and the proposed development.
- b) The maintenance of a compact form and pattern of development is maintained.
- c) The cost effectiveness and fiscal sustainability of all municipal service extensions.
- d) Reserving servicing capacity for redevelopment, infilling and intensification as a first priority.

If a draft plan approval lapses because the conditions were not fulfilled within a prescribed timeframe as outlined in the conditions of approval, Chatham-Kent may assign the servicing allocation to other developments or areas of Chatham-Kent, or hold the capacity in reserve.

When considering lot creation in areas on partial and/or private sewage systems, it must be confirmed that there is sufficient reserve sewage system capacity and reserve water system capacity within a municipal sewage treatment facility and/or a municipal water service treatment facility or private communal sewage service system and/or a private communal water service system. The determination of sufficient reserve sewage system capacity would include treatment capacity for hauled sewage from private communal sewage services and individual onsite sewage services.

### 2.1.6 Endangered Species Act, 2007

The Endangered Species Act 2007 is a law of General Application that is binding on everyone including landowners, corporations, municipal and provincial governments. The ESA applies all the time regardless of approvals under other legislation and Ministry of Natural Resources and Forestry (MNRF) is the only approval authority under the Endangered Species Act 2007.

If the following applies to a proposed application, the Owner must consult Ministry of Natural Resources and Forestry (MNRF):

- a) Natural features as defined in Provincial Policy Statement (woodlands, wetlands, valleylands, etc.) on or within approximately 30 m of the proposed construction/activity footprint.
- b) Watercourses, natural vegetation, overgrown grass, hedgerows, drainage features, hay fields, debris/rock piles, old foundations, and barn/structures located on-site and proposed to be disturbed as part of the application.

Owners should engage Ministry of Natural Resources and Forestry (MNRF) as early as possible when it is anticipated that a project may have impacts to Species at Risk species and/or their habitat or if you are unsure if your project will impact Species at Risk species and/or their habitat. The Species at Risk Technical Memo attached as [Appendix D](#), outlines the process for engaging Ministry of Natural Resources and Forestry (MNRF).

### 2.1.7 Professional Services

All Owners shall retain a Professional Engineer (Engineer) who shall design all services and provide full-time, on-site inspection during the installation of the services.

The Professional Engineer shall be so designated by the Association of Professional Engineers of Ontario.

All reports, drawings and specifications shall be signed, sealed and dated by a Professional Engineer licensed in the Province of Ontario and employed by a Professional Services firm or personally designated as a Consulting Engineer. Professional services used on a development are not limited to a single Professional Engineer. Multiple professional engineers may undertake design and sealing of their respective portions of the project related to their specialty.

The Engineer shall be responsible to carry out the design of all services including:

- the preparation of design drawings
- the preparation of specifications and contract documents
- the preparation of studies and reports
- providing assistance in obtaining approvals
- providing full-time, on-site inspection during service installation
- the preparation of field records
- chairing and preparing minutes of pre-construction meetings and regular job meetings
- the co-ordination of the installation of other utilities (gas, telephone, cable T.V., hydro and Canada Post Services)
- the preparation of record drawings
- the preparation of lot grading sheets
- attending at the final inspection meeting

Professional Services firm also applies to any report taking on professional responsibility. This may apply to biology, environmental, geotechnical, archeology reports etc.

### 2.1.8 Studies and Reports

Certain proposed works to be undertaken by Owners may also be subject to the requirements of the Environmental Assessment Act and Environmental Protection Act. Contact the Ministry of the Environment and Climate Change for further details.

Specific Developments may require the completion of special studies and reports prior to Chatham-Kent granting approval for the Development. Special studies and reports may also be a requirement of the approving authorities such as the Province or a Conservation Authority.

If peer review is required, the costs of these studies shall be borne by the Owner.

Refer to the Chatham-Kent Official Plan that is available on Chatham-Kent's website (<https://www.chatham-kent.ca/business/planning-services/official-plan>). Refer to **Table 9 of Section 10 – Agencies, Approvals, and Notifications** for a list of supporting studies, information, and materials which may be required as a result of a development application.

### 2.1.9 Design Drawings

All development documents shall include design and servicing drawings. Drawings shall be prepared in accordance with [Appendix E – “Guidelines for Professional Engineers Providing Land Development Services”](#).

In general, the drawings shall be on "D" size paper (560 mm x 860 mm), shall be signed and sealed by a Professional Engineer licensed in Ontario, and shall include:

- the location and description of the benchmark (referenced to geodetic elevations)
- key plan
- legend and index

- existing conditions and removals
- road alignment, road elevations, pavement widths
- plan and profile sheets (showing road grades, sewer grades, watermain grades, manhole locations, sizes, and materials)
- utility cross-sections
- grading plans (including lot grading)
- power distribution and road lighting plans
- miscellaneous details (including bedding and backfill)

The drawings shall refer to Ontario Provincial Standard Drawings (OPSD) wherever applicable, except as amended or extended by Chatham-Kent's requirements.

### **2.1.10 Specifications and Special Provisions**

All development documents shall include specifications and contract documents prepared in accordance with the "**Guidelines for Professional Engineers Providing Land Development Services**" (Refer to [Appendix E](#)).

Specifications and Special Provisions shall be prepared on 8½" x 11" paper, with single or double sided printing, neatly bound with a cover clearly describing the particulars of the Development. The first sheet shall include the date, name and telephone number of the Engineer that prepared the documents.

The specifications and contract documents shall include:

- Special Provisions
- Technical Specifications
- General Conditions

The specifications and contract documents shall refer to the Ontario Provincial Standard Specifications (OPSS) wherever applicable, except as amended or extended by Chatham-Kent's requirements.

### **2.1.11 Insurance and Indemnification**

The Owner shall provide to Chatham-Kent a general comprehensive liability insurance policy (Certificate of Insurance) in the amount of \$2 million in a form satisfactory to Chatham-Kent on or prior to execution of an Agreement. The policy shall include Chatham-Kent as additional insured and shall be maintained in full force and effect until the public works have been assumed by the Chatham-Kent. The Owner shall indemnify Chatham-Kent from any loss arising from claims or damages, injury or otherwise in connection with the work done by or on behalf of the Owner.

### **2.1.12 Performance**

To ensure proper performance of offsite work within the Municipal right-of-way, Owners are required to provide an irrevocable Letter of Credit or Subdivision Bond, each of which must be in a form satisfactory to Chatham-Kent, in an amount equal to 100% of the value of the works. For one year after construction, 10% of the offsite works value will be held. The value of the securities to be provided shall be based upon the full amount of construction costs including all taxes. If there is no tender, the Engineer shall provide an estimate of the value of the work. The following securities will be required:



- 20% of Works
- \$200 per acre - Administration Fees
- \$700.00 Preparation and Registration of the Subdivision Agreement
- \$ 2,000.00 Dirt and Debris Deposit
- \$2,000,000 Insurance

All Letters of Credit are required to have automatic renewal clauses. The value of the securities to be provided shall be based upon the full amount of construction costs. The Engineer shall provide an estimate of the value of the work. Chatham-Kent will verify the value of the work and amend the Consulting Engineer's estimate accordingly. The Consulting Engineer's estimate as amended by Chatham-Kent shall be used for establishing the amount of the securities.

If the owner chooses to occupy prior to the works being completed onsite, the Municipality requests 100% value of incomplete works as security.

Chatham-Kent reserves the right to verify the value of the work and amend the Consulting Engineer's estimate accordingly. The Consulting Engineer's estimate as amended by Chatham-Kent shall be used for establishing the amount of the securities.

#### **2.1.13 Delayed Work**

Owners shall note that if Chatham-Kent agrees and/ or requests that some of the work be delayed (i.e., surface asphalt), performance securities for 100% of the outstanding works will be required in addition to the maintenance security. The value of the existing maintenance security can be reduced to cover 100% of the outstanding value of the delayed work once the maintenance period for the work that was not delayed has expired. Chatham-Kent will not accept any other forms of security.

#### **2.1.14 Easements and Right-of-Ways**

Owners shall provide all easements to Chatham-Kent as Chatham-Kent deems necessary. The Owner shall retain the services of an Ontario Land Surveyor to prepare all reference plans.

No permanent structures including trees, fences or shrubs (but excluding driveways) shall be placed on right-of-ways or easements except for fences on side and rear lot lines. Chatham-Kent will not be responsible to restore any permanent structure located on easements, except for driveways. Any trees, shrubs or landscaping structures will not be restored.

#### **2.1.15 Development Charges**

Development charges assist Chatham-Kent in the recovery of growth-related capital expenditures from new development in order to support growth. In order to finance the construction of growth-related capital expenditures, Chatham-Kent will assess development charges to new development. Development charges are amended from time to time and are approved by Council. Owners should contact Chatham-Kent for information regarding the current development charge amounts. Development charges are payable by the Owner upon issuance of a building permit with respect to each residential dwelling unit, building or structure.

In the case of certain non-residential classes of development, the development charges will be based on the area of the buildings. These development charges are typically payable at the time building permits are issued. Development charges are currently collected for the following service categories:



#### Waterworks

- Water Treatment
- Water Supply (transmission main)
- Water Storage
- Pumping Stations

#### Wastewater

- Wastewater Treatment; and
- Truck Sewers

For every service on the water distribution system, the Chatham-Kent Public Utilities Commission requires a water permit. Water Permits are obtained by the builder of a home and are required by the Municipality of Chatham-Kent in order to obtain a Building Permit. The Chatham-Kent Public Utilities Commission does not charge a fee for the Water Permit itself but does require that all applicable charges associated with the service be paid for, at the time of obtaining a permit. The charges due at the time of obtaining a water permit may include a service flat rate, or a deposit in the amount of the estimated cost to construct a service to the road limit as determined by the Chatham-Kent Public Utilities Commission and a meter charge. Both the service flat rate and the estimate deposit will include a meter charge.

The Owner shall also be required to pay, prior to the start of any work, an inspection charge per lot, as determined by the Chatham-Kent Public Utilities Commission. The inspection charge covers cursory spot inspection by the Chatham-Kent Public Utilities Commission; however, the Owner is responsible for providing continuous resident inspection to oversee the design and installation of the subdivision or development. Connections to the existing distribution system are to be made by Chatham-Kent Public Utilities Commission's assigned representative only. The Chatham-Kent Public Utilities Commission's Engineering Department will prepare an estimate for each connection cost. The Chatham-Kent Public Utilities Commission requires a deposit in the amount of estimate for the Subdivision/Owner prior to the connection of any water supply connection.

#### **2.1.16 Oversizing and Off-Site Costs**

In order to ensure that development in Chatham-Kent proceeds in an orderly and cost effective manner, Owners may be required to oversize municipal services to accommodate future Developments. Oversizing includes larger pipe diameter and increased depths.

A Local Service Policy is set out the Chatham-Kent's Development Charges Background Study, which sets out General Policy Guidelines on Development Charges (D.C.) and local service funding for Services Related to a Highway, Water, Wastewater, and Stormwater Management Works. The guideline outlines, in general terms, the size and nature of engineered infrastructure that is considered as a local service, to be emplaced separately by landowners, pursuant to a development agreement.

The policy guidelines are general principles by which staff will be guided in considering development applications. However, each application will be considered, in the context of these policy guidelines and subsection 59(2) of the Development Charges Act, 1997, S.O. 1997, c. 27 (D.C.A.), on its own merits having regard to, among other factors, the nature, type and location of the development and any existing and proposed development in the surrounding area, as well as the location and type of services required and their relationship to the proposed development and to existing and proposed development in the area.

### **2.1.17 Multi Lot Creation by Consent**

Should Chatham-Kent agree to permit multi-lot creation by the consent process, rather than by the plan of subdivision process, all of the requirements noted in this Development Manual shall apply including the preparation and approval of a Stormwater Management Plan.

Refer to the Municipality of Chatham-Kent Official Plan (latest version available on Chatham-Kent's website) for specific requirements for multi lot creation by consent.

## **2.2 Subdivisions/Condominiums**

### **2.2.1 Approvals**

Owners are required to obtain all necessary approvals. Multi-lot creation will proceed under the Plan of Subdivision process which is outlined in [Appendix A – “Process Flow Charts”](#).

Owners should contact the various approving authorities to ascertain permit fees and the required time periods to obtain the approvals. These governing agencies and their approval responsibilities are outlined in **Table 9 of Section 10 – Agencies, Approvals, and Notifications**.

The Development cannot proceed until these approvals are received and copies of the approvals have been filed with Chatham-Kent.

### **2.2.2 Subdivision Agreement**

Specific details of each Subdivision Agreement will be set out as part of the process as outlined in this manual.

All Developments must be designed and constructed in accordance with the requirements of this Development Manual and the corresponding Subdivision Agreement.

The Subdivision Agreement will set out specific requirements for each Development. In case of conflict the Subdivision Agreement will supersede the requirements of this manual.

The Subdivision Agreement will be prepared by Chatham-Kent at the cost of the Owner.

No connections to municipal services or utilities can be constructed until agreements are executed and securities have been delivered to Chatham-Kent.

The Chatham-Kent Public Utilities Commission acts through inspections termed by the subdivision inspection and subdivision final inspection.

The Chatham-Kent Public Utilities Commission acceptance of water and wastewater facilities constructed under the Subdivision Agreement shall be communicated in writing to both the Owner's consultant and the Planning Services Department. The Planning Services and Engineering Services will act to administrate the terms of the Subdivision Agreement, which pertain to water and wastewater facilities on the Chatham-Kent Public Utilities Commission's behalf.

Additional applications may be required as part of the subdivision approval process including: consent, minor variance, zoning by-law amendments, official plan amendments, site plan control, and plan of subdivision. Flow charts illustrating the steps in the development process are included in [Appendix A - “Process Flow Charts”](#).

### 2.2.3 Maintenance

Unless otherwise noted in the Subdivision Agreement, Owners are required to provide an irrevocable Letter of Credit or Subdivision Bond, cash or cheque, each of which must be in a form satisfactory to the Municipality of Chatham-Kent, in an amount equal to 10% of the total value of the works, and 100% of any incomplete works (ie. – asphalt, sidewalks, etc.). Chatham-Kent reserves the right to verify the value of the works. The length of the maintenance period shall be as noted in **Subsection 3.2.2**. See flowcharts for definition of completion/acceptance ([Appendix A – “Process Flow Charts”](#)).

### 2.2.4 Phasing

Chatham-Kent acknowledges that Developments may proceed in phases. However, in granting approval to a new plan of subdivision or an amendment to or review of an existing plan of subdivision, Chatham-Kent will impose a condition under the authority of Subsection 51(32) of the Planning Act, which will provide for the lapsing of the approval not less than three years from the date of approval. Chatham-Kent may extend the approval for a time period specified by Chatham-Kent. No extension is permissible if the approval lapses before the extension is given. Prior to the commencement of construction, the Owner shall submit a phasing plan for municipal approval. Chatham-Kent's approval of the phasing plan will be based on:

- firefighting protection (All dead-end streets shall have turn-arounds and shall meet the requirements of Chatham-Kent, and should be removed after no longer in use. Temporary dead-ends shall not exceed 300 m (secondary emergency access requirement may apply) in length measured to the end of the cul-de-sac unless approved by Chatham-Kent.)
- the extension of trunk facilities to adjacent Developments in as approved by Chatham-Kent
- minimizing the municipal maintenance costs, such as snow ploughing
- completing the municipal road network

The phasing will be implemented according to the Subdivision Agreement. The project will still proceed under one development agreement for the entire development, however, the Owner may choose to split the security deposit based on the construction value of each phase. This allows Chatham-Kent to manage the warranty periods/releases of securities separately.

All construction drawings submitted must be in accordance with the approved Subdivision Agreement.

### 2.2.5 Pre-Construction Meeting

No later than seven days before construction is to commence, the Owner's Engineer shall call and chair a pre-construction meeting. The Consulting Engineer, general contractor and municipal representatives must attend. The Chatham-Kent Utility Co-ordinator Committee must also be notified of pre-construction meeting.

It is also mandatory to have the Owner and the Consulting Engineer's site inspector in attendance. The topics of discussion for the meeting shall include but not be limited to:

- the status of contract documents
- the submission of insurance certificates, irrevocable Letter of Credit or Subdivision Bond
- Work Place Safety Insurance Board clearance
- Ministry of Labour notification
- supervisory staff
- emergency telephone numbers and home telephone numbers

- construction access routes
- schedules
- noise and dust control
- notification for municipal inspections
- suppliers and subcontractors
- specific project items
- pre-construction survey/ photos
- traffic control/ detouring
- schedule of site meetings
- other items

The Engineer will provide minutes of meetings within one week from the meeting date.

## 2.3 Other Site Developments

### 2.3.1 Approvals

Owners are required to obtain all necessary approvals. Multi-lot creation will proceed under the Site Plan process.

Owners should contact the various approving authorities to ascertain permit fees and the required time periods to obtain the approvals. These governing agencies and their approval responsibilities are outlined in **Table 9 of Section 10 – Agencies, Approvals, and Notifications.**

The Development cannot proceed until these approvals are received and copies of the approvals have been filed with Chatham-Kent.

### 2.3.2 Agreements

Certain classes of development, as defined by Chatham-Kent's Site Plan Control By-law are subject to Site Plan approval. Specific details of each Site Plan Agreement will be set out as part of the process as outlined in this manual and as set out in the specific conditions of the agreement.

All Developments must be designed and constructed in accordance with the requirements of this Development Manual and the corresponding Agreement.

The Agreement will set out specific requirements for each Development. In case of conflict the Agreement will supersede the requirements of this manual.

The Agreement will be prepared by Chatham-Kent at the cost of the Owner.

No work can proceed in the Development until the agreement is executed by both parties and all financial securities and insurance are provided.

Additional applications may be required as part of the subdivision approval process including: Flow charts illustrating the steps in the development process for consent, minor variance, zoning by-law amendments, official plan amendments, site plan control, and plan of subdivision. Flow charts illustrating the steps in the development process are included in [Appendix A - "Process Flow Charts"](#).

### 2.3.3 Maintenance

Unless otherwise noted in the Site Plan Agreement, Owners are required to provide an irrevocable Letter of Credit, Subdivision Bond, cash or cheque each of which must be in a form satisfactory to the Municipality of Chatham-Kent, in an amount equal to 10% of the total value of the off-site works, and 100% of any incomplete works (ie. asphalt, sidewalks, etc.). Chatham-Kent reserves the right to verify the value of the works. The length of the maintenance period shall be as noted in **Subsection 3.2.2**. See flowcharts for definition of completion/acceptance.

### 2.3.4 Pre-Construction Meeting (for Off-Site Works Only)

No later than seven days before construction is to commence, the Owner's Engineer shall call and chair a pre-construction meeting. The Engineer, general contractor and municipal representatives must attend.

It is also desirable to have the Owner and the Engineer's site inspector and representatives from the various utility companies in attendance. The topics of discussion for the meeting shall include but not be limited to:

- the status of contract documents
- the submission of insurance certificates, irrevocable Letter of Credit or Subdivision Bond
- Work Place Safety Insurance Board clearance
- Ministry of Labour notification
- supervisory staff
- emergency telephone numbers and home telephone numbers
- construction access routes
- schedules
- noise and dust control
- notification for municipal inspections
- suppliers and subcontractors
- specific project items
- pre-construction survey/ photos
- traffic control/ detouring and
- schedule of site meetings

The Engineer will provide minutes of meetings within one week from the meeting date.

## **3.0 GENERAL REQUIREMENTS DURING AND IMMEDIATELY AFTER CONSTRUCTION**

### **3.1 General**

#### **3.1.1 Public and Agency Notifications**

Prior to the start of construction, the contractor shall arrange to notify all public agencies and emergency response agencies of the impending start date and completion date of the project. As well, the Engineer shall arrange to notify all abutting property owners of the impending construction, as a minimum, or as determined through Chatham-Kent who will be affected by construction. Copies of the notification shall be submitted to Chatham-Kent. The notification shall include:

- a brief description of the project
- the construction start date
- the scheduled completion date
- any temporary road closures
- contact people from the Contractor and Engineer, including their phone numbers

The list of agencies to be notified and their approval responsibilities are outlined in **Table 9 of Section 10 – Agencies, Approvals, and Notifications.**

#### **3.1.2 Consultants Inspections and Quality Assurance Testing Services**

The Engineer shall provide full-time on-site inspection services during the construction activity. Chatham-Kent reserves the right to request a change to the Engineer's Inspector if Chatham-Kent believes the Inspector is not qualified.

The Engineer's Site Inspector shall ensure that the work is constructed in accordance with the intent of the design documents and shall keep records of the work.

As a minimum, the site inspector shall prepare / conduct:

- a diary indicating daily progress of work, labour and equipment on site
- measurements of pay items
- discussions with general public and agency representatives
- a log of any accidents
- record drawing details (including grades, sizes, materials, inverts, etc. of all services)

The Engineer shall arrange for quality assurance testing by an independent testing firm. Tests shall include, but not limited to:

- granular material gradation analysis
- engineered fill assessment
- asphalt extraction and gradation analysis
- compaction tests, granular, asphalt
- road cut sub-grade inspection
- concrete, quality assurance testing (slump, air content, compressive strength samples)
- sewer air tests for storm and sanitary sewers
- for concrete storm sewer greater than 600 mm (24"), visual inspection and individual joint testing is acceptable

- sewer camera inspections for storm and sanitary sewers, including services, water main pressure tests, leak tests, disinfecting tests (see – “Watermain Commissioning Checklist” from the Chatham-Kent Public Utilities Commission)
- other tests called for in the contract documents.

One copy of all test certificates shall be neatly bound, indexed and provided to Chatham-Kent at the time the record drawings are submitted.

### 3.1.3 Municipal Inspection and Acceptance

(Including Off-Site Works and Stormwater Management/Sanitary Grit/Oil Separator/Water Backflow Prevention)

Once all of the required municipal services listed in **Section 4.1** are completed, the Owner will be required to transfer ownership of the services to Chatham-Kent. This is a two-step process as outlined below. Refer to the Acceptance and Assumption Flow Chart found in [Appendix A - “Process Flow Charts”](#).

Chatham-Kent will carry out its own independent inspection as deemed necessary. As a minimum, Chatham-Kent will inspect the subgrade excavation, granular base prior to placing curbs, granular base prior to asphalt paving, and testing of watermains and sewers. The Engineer will give Chatham-Kent 48 hours’ notice prior to these inspections.

Should sufficient notice not be given, and the Contractor proceeds with the work, Chatham-Kent will not accept the services without further testing, which may include total or partial removal of pavement or curbs, etc. All this additional testing will be at the Contractor's expense.

It is therefore imperative that the Contractor's schedule be made available to Chatham-Kent at the job meetings, and Chatham-Kent be promptly advised of any changes to this schedule.

Once all of the required municipal services listed in **Section 4.1** are installed and all deficiencies corrected to the satisfaction of Chatham-Kent's Infrastructure and Engineering Services Division representative will inspect the Development and advise the Director of Infrastructure and Engineering Services Division by report that Chatham-Kent should "accept the services" and that the maintenance period should begin. The date of Chatham-Kent's letter to the Owner accepting the services is the commencement date of the maintenance period. During the maintenance period, it will be the Owner's sole responsibility to maintain all the services, including but not limited to, cleaning catch basins and maintaining the general condition of the vacant lots and road right-of-ways as established in the Site Plan Agreement. Chatham-Kent will undertake all required snow plowing on the road right-of-ways for Municipal roads – not including any private roadways.

Within 30 days prior to the expiration of the maintenance period, the Engineer is to arrange for a field inspection by Chatham-Kent, the Contractor, and the Engineer. All storm and sanitary sewers and storm and sanitary sewer private drain connections shall be flushed clean and video inspected. Catch basins shall be cleaned and all settlements repaired prior to the municipal inspection. Provided there are no outstanding deficiencies and all Site Plan Agreement requirements have been satisfied, including payment of all accounts and the receipt of a statutory declaration that all accounts have been paid, the municipal representative will submit a report to the Manager of Engineering and Infrastructure Services requesting that Chatham-Kent "assume the development". The issuance of a Certificate of Assumption to the Owner results in the transfer of ownership of the services to Chatham-Kent, after which the Owner is no longer obligated to maintain or repair the services.



## 3.2 Subdivisions/Condominiums

### 3.2.1 Municipal Inspection

Chatham-Kent will carry out its own independent inspection as deemed necessary. As a minimum, Chatham-Kent will inspect:

- the subgrade excavation
- granular base prior to placing curbs
- granular base prior to asphalt paving
- testing of watermains and sewers

The Engineer will give Chatham-Kent notice two (2) business days prior to these inspections, with the exception of minimum seven (7) business day notice for water and sewer inspection. Should sufficient notice not be given, and the Contractor proceeds with the work, Chatham-Kent will not accept the services without further testing, which may include total or partial removal of pavement or curbs, etc. All this additional testing will be at the Contractor's expense.

It is therefore imperative that the Contractor's schedule be made available to Chatham-Kent at the job meetings, and Chatham-Kent be promptly advised of any changes to this schedule.

### 3.2.2 Maintenance Period

The maintenance period shall be one year from the date of Chatham-Kent's letter to the Owner accepting the services, except as previously provided in **Section 2.2.3**.

The delaying of the surface course of asphalt will not prevent accepting the remaining services. The maintenance security and liability insurance must remain in force for the duration of the maintenance period. The Director of Infrastructure and Engineering Services Division will issue letter to assume storm, sanitary, water, base asphalt, and sidewalk Instructions to place surface asphalt in one year maintenance will be included in letter.

The Owner is obligated to perform (or pay for) all maintenance and repairs to the services (should Chatham-Kent undertake this work) during the maintenance period including street cleaning of mud and debris, sewer flushing if necessary, weed control on all developed or undeveloped lands at Chatham-Kent's request. For storm and sanitary pump stations refer to **Section 5.6 & Section 5.7**.

### 3.2.3 Clean-up

The Owner shall maintain the construction site in a neat and tidy manner (also during the maintenance period). Dust shall be controlled by wetting or establishing vegetative ground cover. Debris blown off the site shall be cleaned up on a daily basis. All mud and dirt tracked off-site shall be cleaned frequently and at least once a day.

All vacant lots, owned by the Owner, shall be maintained at the Owner's expense. The Owner shall provide notice in all purchase and sale agreements that Chatham-Kent may perform periodic maintenance and will invoice the Owner of the lot. Periodic maintenance will be required to remove debris, to eliminate standing water, and to cut weeds. All waste materials must be properly disposed to eliminate the risk of injury and to maintain a healthy environment to all surroundings.

The decision of Chatham-Kent regarding clean up shall be considered final. Should the Owner or lot Owner not clean-up in a timely manner, Chatham-Kent will arrange to have the work done by others, or its own forces, and will invoice the Owner or lot Owner for its costs.



### 3.2.4 Lot Servicing Sheets / Registered Lot Creation Drawings

The Engineer shall provide copies of lot servicing sheets and registered lot creation drawings (i.e. M-plans, R-plans). Two copies of each (lot servicing and registered lot creation drawings), shall be submitted to Building Services and the Engineering and Infrastructure Services Departments. The lot servicing sheets shall show final lot grades, sidewalk widths, setbacks from property line, easements, noise attenuation walls, and the location, elevation, material, and size of lot services (storm, sanitary, water ,power). The municipal address should also be included. Drawings shall be submitted in electronic format (AutoCAD format in projection NAD83 UTM Zone 17 and PDF, please confirm AutoCAD Version with Chatham-Kent).

The forms for lot servicing shall be in accordance with **Figures L-1 to L-10 of [Appendix B – “Roads, Stormwater and Illumination Specifications & Details.”](#)** Blank example service sheets can be found in [Appendix F](#) and electronic versions can be obtained from Chatham-Kent.

### 3.2.5 Record Drawings

Record drawings shall be prepared by a Professional Engineer showing the as- constructed location, size, and material of all services. Wherever possible, underground utilities located relative to property lines shall also be located relative to surface features. The record drawings shall be dated and noted ‘As Built’. (Also see [Subsection 3.2.5](#))

One drawing set in each CAD and PDF format shall be provided in electronic format (USB drive).

Record Drawings must be submitted within 60 days from the date Engineering and Infrastructure Services has "accepted the services". Maintenance hold-back will not be returned until drawings have been submitted to the Municipality of Chatham-Kent.

### 3.2.6 Model Homes

- (1) The Chief Building Official may issue building permits in advance of the completion of all required works for ten percent (10%) or the maximum of four (4) dwellings (rounded upward) of the total dwelling units in any particular phase of a Development provided:
  - a) the base coat of asphalt has been installed, to the satisfaction of the Engineering and Transportation Division, in the road allowance in front of and abutting the lot for which the building permit is being sought, and including any access routes
  - b) 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 Railway right-of-way.
  - c) it is determined from a review of the approved plans that there is no conflict between the activity that would result from the building permit being issued and the installation of various utilities in the utility corridor.
  - d) it is clearly noted on the building permit that occupancy of the dwelling unit will not be permitted until Chatham-Kent has accepted the services and all work complete , except the top coat of asphalt to the satisfaction of the Engineering and Infrastructure Services Division, and the final plan of subdivision has been registered along with any required easement.
  - e) and that all Agreements to Purchase affecting the subject property will provide a notice regarding the restriction pertaining to occupancy, And a copy of which will be filed with the municipality. Such notice will be required on all Agreements to Purchase until such time as the required works, excluding the top coat of asphalt, are completed to the satisfaction of the Director of Engineering and Infrastructure Services Division.

- f) a letter is received from the Owner's Engineer confirming support for the model home building permit issuance.
- (2) The dwelling unit may connect to water and sewer services. The dwelling unit shall not be granted occupancy by Chatham-Kent until such time that all outstanding items relating to the Development are completed, and the final plan of subdivision has been registered along with any easement requirements and all signed off by Chatham-Kent.

### 3.2.7 Building Permit Issuance

In accordance with the requirements of the Ontario Building Code, construction cannot commence on any buildings until a building permit is issued. This is Provincial legislation administered by Chatham-Kent. Chatham-Kent does not have the authority to waive this Provincial legislative requirement. Building permits will not be issued until such time as Chatham-Kent has "accepted the services" as outlined in **Subsection 3.1.3.**

In order to issue building permits other than for model homes, Chatham-Kent's Chief Building Official must have a complete set of documents and be assured that the buildings have full services including base asphalt, firefighting access, potable water, heat, and energized power. Streetlights must be operational before building permit issuance.

Conditional permits may be released subject to approval by The Chief Building Official. However, issuance of building permits will cease if street lights are not operational within 60 days of the issuance of the first building permit.

Owners are cautioned that The Chief Building Official will not be in a position to advise that building permits are available until:

- lot servicing sheets have been submitted
- registered lot creation plans have been submitted
- Engineering and Infrastructure Services Division has "accepted the services"

If record drawings have not been submitted within 60 days from the date which Engineering & Infrastructure Services has "accepted the services", the Chief Building Official Services will not continue to issue building permits.

### 3.2.8 Indemnity Deposits

Owners 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 address items such as but not limited to ensuring:

- all required 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
- the water meter is installed and inspected
- the location of municipal service connections is submitted
- record drawings are submitted, if required

Contact Chatham-Kent 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 has been granted.

### 3.3 Other Site Developments

#### 3.3.1 Works in Right-of-Way - Maintenance Period

The maintenance period shall be one year from the date of Chatham-Kent's letter to the Owner accepting the services, except as previously provided in **Subsection 2.3.3**.

The delaying of the surface course of asphalt will not prevent accepting the remaining services. The maintenance security and liability insurance must remain in force for the duration of the maintenance period.

The Owner is obligated to perform (or pay for) all maintenance and repairs to the services (should Chatham-Kent undertake this work) during the maintenance period including street cleaning of mud and debris, sewer flushing if necessary, weed control on all developed or undeveloped lands.

#### 3.3.2 Clean-up

The Owner shall maintain the construction site in a neat and tidy manner (also during the maintenance period). Dust shall be controlled by wetting or establishing vegetative ground cover. Debris blown off the site shall be cleaned up on a daily basis. All mud and dirt tracked off-site shall be cleaned frequently and at least once a day.

All vacant lots, owned by the Owner, shall be maintained at the Owner's expense. The Owner shall provide notice in all purchase and sale agreements that Chatham-Kent may perform periodic maintenance and will invoice the Owner of the lot. Periodic maintenance will be required to remove debris, to eliminate standing water, and to cut weeds. All waste materials must be properly disposed to eliminate the risk of injury and to maintain a healthy environment to all surroundings.

The decision of Chatham-Kent regarding clean up shall be considered final. Should the Owner or lot owner not clean-up in a timely manner, Chatham-Kent will arrange to have the work done by others, or its own forces, and will invoice the Owner or lot owner for its costs.

#### 3.3.3 Building Permit Issuance

In accordance with the requirements of the Ontario Building Code, construction cannot commence on any buildings until a building permit is issued. This is Provincial legislation administered by Chatham-Kent. Chatham-Kent does not have the authority to waive this Provincial legislative requirement. Building permits will not be issued until such time as Chatham-Kent has "accepted the services" as outlined in **Subsection 3.1.3**.

In order to issue building permits other than for model homes, Chatham-Kent's Chief Building Official must have a complete set of documents and be assured that the buildings have full services including base asphalt, firefighting access, potable water, heat, and energized power. Streetlights must be operational before building permit issuance.

The issuance of building permits will cease if street lights are not operational within 60 days of the issuance of the first building permit. Conditional permits may be released subject to approval by the Chief Building Official.

Owners are cautioned that Chief Building Official will not be in a position to advise that building permits are available until:

- lot servicing sheets have been submitted
- registered lot creation plans have been submitted
- Engineering and Infrastructure Services has "accepted the services"

If record drawings have not been submitted within 60 days from the date which Engineering & Infrastructure Services has "accepted the services", The Chief Building Official will not continue to issue building permits.

### **3.3.4 Record Drawings for Off-Site Works**

Record drawings shall be prepared by the Engineer showing the as- constructed location, invert elevation, size, and material of all services. Wherever possible, underground utilities located relative to property lines shall also be located relative to surface features. The record drawings shall be dated and noted 'As Built'.

One drawing set in each CAD and PDF format shall be provided in electronic format (USB Drive). Record Drawings must be submitted within 60 days from the date Engineering and Infrastructure Services has "accepted the services".

## 4.0 **INFRASTRUCTURE DEVELOPMENT REQUIREMENTS**

### 4.1 **General**

Unless noted otherwise in the Subdivision Agreement, Chatham-Kent will require full municipal services for all Developments. These services in the right-of-way or within easements shall include:

- asphalt paved roads
- sidewalks and/or active transportation paths
- concrete curb and gutter
- precast concrete curb-inlet catch basins with cast iron frame and cover (barrier curb)
- road subdrains
- storm and sanitary pump stations
- storm and sanitary sewers
- precast concrete manholes with cast iron frames and covers and aluminum ladder rungs
- water mains, valves and fire hydrants
- water meters
- water stations
- private service connections including storm and sanitary PDCs, or polyethylene water services and in some cases backflow prevention devices
- underground power distribution with pad mounted transformers
- street lighting (poles, led, decorative types)
- other services including telecommunication and gas
- extra conduit for future use
- tree planting requirements (see **Section 9.5**)
- other services including traffic signals, railway protection, etc.

#### 4.1.1 **Right-of-Ways, Cul-de-Sacs**

For local and collector roads please refer to [Appendix B – “Roads, Stormwater and Illumination Specifications & Details.”](#) **Figure CS-6**. For arterial roads, contact Chatham-Kent. Where feasible, cul-de-sacs should be reduced to provide for better connectivity and due to maintenance and emergency access issues.

Cul-de-sacs and other single access roadways may be permitted when they are 300 metres or less in length measuring from the centre of the intersecting right-of-way to the end of the cul-de-sac or the farthest extent of the single access road. For phased development temporary dead-end roads shall have a maximum length of 300 metres with a temporary turn around for emergency services constructed at the end of roadway segment, which is required to be fully removed and restored prior to commencing additional phase(s).

If a temporary cul-de-sac or turnaround is contained within a development, the cul-de-sac or turnaround must be hard surfaced. If contained outside of a development (through an easement on adjacent property) the temporary cul-de-sac or turnaround can be compacted granular.

#### 4.1.2 Pavement Widths

- The pavement width for local roads shall be designed as per **Figures CS-1, CS-3, CS-5** of [Appendix B – “Roads, Stormwater and Illumination Specifications & Details.”](#)
- The private road widths for condominium type developments shall be 8.0 metres (measured between edges of pavement). For collector roads, the road width shall be designed as per **Figure CS-2 and CS-4** of [Appendix B – “Roads, Stormwater and Illumination Specifications & Details](#)
- For collector roads containing a boulevard, pavement widths shall be designed as per **Figure CS-4** of [Appendix B – “Roads, Stormwater and Illumination Specifications & Details.”](#)
- For arterial roads, contact Chatham-Kent Engineering and Transportation.

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 Owner's Engineer or a sub-consultant experienced in traffic engineering if requested by Chatham-Kent.

Owners are encouraged to contact Chatham-Kent early in the process to determine whether a traffic study is required.

#### 4.1.3 Minimum Turning Radius

Unless specifically noted otherwise, all intersection streets shall have a minimum radius of 9 metres (measured at edge of pavement) for Residential or 15 metres for Industrial. Cul-de-sacs shall have a minimum radius of 12 metres residential and 15 metres industrial (measured at edge of pavement). Refer to **Figure CS-3** of [Appendix B – “Roads, Stormwater and Illumination Specifications & Details.”](#)

#### 4.1.4 Sidewalks, Bikeways, Walking Trails, Multi-use Pathways

Chatham-Kent requires that sidewalks be located on both sides of all arterial roads and collector roads and on one side of all local roads. Sidewalks are not required on cul-de-sacs less than 150 m in length from the intersecting road centreline. Any other requirements for sidewalks will be noted in the Subdivision Agreement. Chatham-Kent encourages bikeways, walking trails, and multi-use pathways in all new Developments. Bike lanes may be requested on collector and arterial roads, at Chatham-Kent's discretion, and at the Owner's expense. Walking trails and multi-use pathways may be required at various locations, at the Owner's expense. See **Sections 5.3** and [Appendix B – “Roads, Stormwater and Illumination Specifications & Details,”](#) and [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual”](#) for further details.

#### 4.1.5 Driveways

Unless otherwise noted in the applicable Zoning By-law, only one driveway per lot will be permitted for single unit dwellings and only one driveway per unit will be permitted for two unit and townhouse style multi-unit development. Two driveways may be permitted for commercial, industrial and institutional developments as determined through site plan control and the Municipality of Chatham-Kent Driveway Access Policy ([Appendix G](#))

Driveways will not be permitted within site visibility triangles. The Owner will be required to hard surface the driveway apron (the area between the paved portion of the street and the front lot line).

If there is a sidewalk located through the driveway, the Owner is required to hard surface Chatham-Kent's property on or within the Municipal right of way.

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 Owner 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.

#### **4.1.6 Development in Close Proximity to Railways**

Owners are to note that for all Developments abutting or in close proximity to Railway right-of-ways, Chatham-Kent will require them to:

- obtain written comments from the Railway company and submit a copy of the Railway's comments to Chatham-Kent
- address safety issues in case of train derailments, by including setbacks, safety berms, or other safety measures in the design
- complete a noise and vibration study providing site specification recommendations (any recommendation shall be included in the purchase and sale agreement of lots and must be shown at the time of building permit submission)
- address trespass issues

Notwithstanding, any other requirements, the Owner must comply with the Railway's requirements.

All infrastructure works needed to comply with this clause shall be the property of the Owner (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. 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 Chatham-Kent.

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 Railway right- of-way. No dwelling shall be erected within 20 m of the centerline of railway (see Section 4.33 of Zoning By-law 2009).

The Owner (and subsequent property owners) shall grant easements in favour of Chatham-Kent and the Railway Company, to enable inspection of the infrastructure.

#### **4.1.7 Development in Close Proximity Waterfront, Environmentally Sensitive Areas**

Notwithstanding any other provision of the By-laws of the Municipality of Chatham-Kent, no person shall hereafter erect any permanent 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 outline in Section 4.33.1 of the Zoning By-law 2009.

#### **4.1.8 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.

Chatham-Kent is obligated to provide a safe, reliable potable water supply to its customers. Working in that direction, Chatham-Kent Public Utilities Commission requires Owners 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
- Municipality of Chatham-Kent's By-Laws and other applicable regulations
- Chatham-Kent Public Utilities Commission Policies and Procedures

Chatham-Kent will require the installation of backflow prevention devices on all fire lines. Unless specifically allowed otherwise by Chatham-Kent, all services larger than 25 mm shall have backflow preventive devices installed in an accessible location inside of the building, subject to the approved site plan. Backflow prevention devices are required for all industrial, commercial, institutional (ICI) and multi-unit residential buildings and structures four stories and up. See Cross Connection Protection and Backflow Prevention By-law Requirements as per the Chatham-Kent Public Utilities Commission.

The Chatham-Kent Public Utilities Commission allows potable water services to be connected to private fire lines. Refer to figures in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual.”](#) For purposes of this clause, fire lines include lines serving yard fire hydrants, hose and stand pipe systems and sprinkler systems.

- No more than two fire hydrants in the water system shall be taken out of service by a watermain shutdown, unless an alternative is agreed upon with the fire department.
- The number of hydrants needed in any area depends upon the fire flow required. The consultant shall follow all provincial and local recommendations about the fire flow and minimum number of hydrants on a new or extended portion of the system.
- options be reviewed with the Chatham-Kent Public Utilities Commission prior to implementation so the best option can be selected

The location of the water meter will be at Chatham-Kent's discretion.

In some cases, fire lines will be required to be metered, unless the Owner can demonstrate that water cannot be used for any purpose other than fire-fighting.

These appurtenances shall be paid for and maintained at the Owner's expense, according to the requirements of Chatham-Kent's Backflow Prevention By-law (refer to **Cross Connection Protection and Backflow Prevention By-law Requirements** as per the Chatham-Kent Public Utilities Commission) . All water meters require remote reading capability. Refer to [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual.”](#)– “PUC Design Drawings, Details & Figures” for typical details.

#### 4.1.9 Indemnity Deposits

Owners 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 address items such as, but not limited to, ensuring:

- all required 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



- dust from the site is controlled
- driveway approaches are constructed
- the water meter is installed and inspected
- the location of municipal service connections is submitted
- record drawings are submitted, if required

Contact Chatham-Kent 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 has been granted.

#### **4.1.10 Parking and Access Areas**

All parking areas and access areas shall be paved with asphalt, concrete or paving stones to control dust and provide adequate drainage. Note – paving stones not permitted in the Municipal right-of-way.

#### **4.1.11 Stormwater Management Facilities**

Should Owners use the parking areas as temporary ponds to retain stormwater, the maximum depth of ponding shall be limited to 300 mm. (See **Section 5.6.1 for Stormwater Management Facility Design and [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”](#)**). For subdivision development, the design of the road network should convey the overland flow routing of the major storm event to the stormwater management facility, where feasible, and if not feasible, alternatives shall be considered as approved by Chatham-Kent and conservation authorities.

### **4.2 Residential Sites**

#### **4.2.1 General**

The general requirements of **Section 4.1** shall apply and govern except as amended or extended herein.

#### **4.2.2 Semi-Urban Developments**

Notwithstanding that it is Chatham-Kent’s policy to require curbs and gutters on all new streets, Chatham-Kent may consider reducing the municipal standard for new Developments abutting existing Developments that have been developed to semi-urban standards (Refer to [Appendix B, Figure CS-5](#)).

#### **4.2.3 Road Classification**

Arterial streets are defined by Chatham-Kent after conducting a traffic study. Contact Chatham-Kent for details. Road classification types are also delineated in the Official Plan, Transportation Master Plan.

Residential, arterial, and collector streets will be defined in the Subdivision Agreement and are streets that provide the major access and egress points from the development to the surrounding area. These streets will be the major access route for firefighting and emergency service vehicles to the Development and will generally service more than 200 residential units. The estimated minimum Annual Average Daily traffic could be 1000 when the site and surrounding area are developed. Collector roads may have restricted and/ or controlled access.

All other residential streets are classified as local residential streets.

#### 4.2.4 Driveways

All residential driveways shall be hard surfaced from the curb and gutter or pavement edge (except for semi-urban developments), to the property line or easement line, whichever is furthest from the street. All efforts shall be made to avoid locating sanitary cleanouts and/or water shut-off valves in the driveway. Driveway materials shall be in compliance with the zoning by-law, which is site specific according to zone designation. (See **Figures D-1 to D-4** in [Appendix B](#) of this Development Manual for further details).

Owners shall advise purchasers of lots in the Purchase/Sale Agreement, that should it be necessary for Chatham-Kent to repair or replace municipal services (and private driveways are damaged) Chatham-Kent will restore the driveway with asphalt or plain concrete only, regardless of the existing driveway type unless the property owner pays for the additional costs to restore special driveways including stamped or coloured concrete.

#### 4.2.5 Condominiums

In Condominium type development where Chatham-Kent will not assume the roadway and other services, the development standards shall be established in the Condominium/Development Agreement. Pavement widths shall be as per **Subsection 4.1.2** of this Development Manual.

### 4.3 Commercial Sites

#### 4.3.1 General

The general requirements of **Section 4.1** shall apply and govern except as may be extended or amended herein.

#### 4.3.2 Parking and Access Areas

All parking areas and access areas shall be hard surface in compliance with the zoning by-law, which is site specific according to zone designation and designed to control dust and provide adequate drainage. Note – paving stones not permitted in the Municipal right-of-way.

#### 4.3.3 Stormwater Management Facilities

Should Owners use the parking areas as temporary ponds to retain stormwater, the maximum depth of ponding shall be limited to 300 mm and the maximum duration of storage shall be 24 hours, for a 1:100 year rainfall event unless it can be shown that deeper depths (or a longer duration) will not adversely affect parking lot operation.

### 4.4 Industrial Sites Urban

#### 4.4.1 General

The general requirements of **Section 4.1** shall apply and govern except as may be extended or amended herein.

#### 4.4.2 Roads

The minimum road width shall be 8.5 metres with no parking (measured between edges of pavement). A geotechnical investigation defining the pavement cross section parameters may be required by Chatham-Kent.

Intersection turning radius shall be a minimum of 15 metres, to edge of pavement. Cul-de-sac radius, if allowed, shall be a minimum of 15 metres.

#### **4.4.3 Parking and Access Areas**

All parking areas and access areas shall be hard surface with in compliance with the zoning by-law, which is site specific according to zone designation and designed to control dust and provide adequate drainage.

Should Owners use the parking areas as temporary ponds to retain stormwater, the maximum depth of ponding shall be limited to 300 mm and the maximum duration of storage shall be 24 hours, for a 1:100 year rainfall event unless it can be shown that deeper depths (or a longer duration) will not adversely affect parking lot operation.

Industrial tenants choosing to utilize parking lots as stormwater storage hereby acknowledge the risk of building flooding on the property. Building grading/elevation shall be constructed in a way to reduce the risk of building flooding from parking lot storage.

#### **4.4.4 Rural Industrial Sites**

Notwithstanding that it is Chatham-Kent's policy to require all items as previously outlined within this section in all new industrial Developments, Chatham-Kent may consider reducing the municipal standard for new industrial sites in rural / agricultural areas. Special relief from the above standards may be granted through the Site Plan Control process with specific reliefs detailed in the Site Plan Agreement. The extent to which relief shall be granted is affected by factors including, but not limited to, the zoning and level of development of the abutting properties, the relative size of the site in relation to surrounding Developments, and the absence of municipal services.

### **4.5 Institutional Sites**

#### **4.5.1 General**

The general requirements of **Section 4.1** shall apply and govern except as may be extended or amended herein.

#### **4.5.2 Parking and Access Area**

All parking areas and access areas shall be hard surface in compliance with the zoning by-law, which is site specific according to zone designation and designed to control dust and provide adequate drainage.

Should Owners use the parking areas as temporary ponds to retain stormwater, the maximum depth of ponding shall be limited to 300 mm and the maximum duration of storage shall be 24 hours, for a 1:100 year rainfall event unless it can be shown that deeper depths (or a longer duration) will not adversely affect parking lot operation.

Institutional tenants choosing to utilize parking lots as stormwater storage hereby acknowledge the risk of building flooding on the property. Building grading/elevation shall be constructed in a way to reduce the risk of building flooding from parking lot storage.

## **4.6 Recreational / Park Sites**

### **4.6.1 General**

The general requirements of **Section 4.1** shall apply and govern except as may be extended or amended herein. All parkland must be fine graded and hydro-seeded or sodded by the Owner within 12 months of acceptance of the abutting services on maintenance. A minimum 75% consistent germination (established grass - at start of growing season) is required as determined by Chatham-Kent. All park sites abutting residential shall be fenced to Chatham-Kent's satisfaction, in accordance with Chatham-Kent's Fence By-Law.

### **4.6.2 Parking and Access Areas**

All parking areas and access areas shall be hard surface in compliance with the zoning by-law, which is site specific according to zone designation and designed to control dust and provide adequate drainage.

### **4.6.3 Stormwater Management Facilities**

All play areas or passive areas used for stormwater management facilities shall be designed so that the maximum depth of storage is 300 mm for a maximum duration of 24 hours, for a 1:100 year rainfall event. Parking lots may be used for stormwater storage.

## **4.7 Transportation Master Plan**

The Transportation Master Plan guidelines are applicable to all developments. They consist of Parking, Walking and Cycling, Road Classification, and Subdivision Design. These guidelines are available on [Chatham-Kent's Website](#)

## **5.0 DESIGN CRITERIA**

### **5.1 General**

The following design criteria shall apply as minimum requirements unless specifically noted otherwise in the Subdivision Agreement, superseded by Provincial or Federal legislation, or reports/studies (ie. Geotechnical studies).

### **5.2 Roads**

Asphalt Pavement structures shall consist of the minimum material thicknesses outlined in the roadway cross sections **Figures C-1 to C-6 – [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details.”](#)** Or as determined by a geotechnical investigation. Chatham-Kent reserves the right to require a geotechnical investigation.

Design and installation shall be in accordance with Chatham-Kent Specifications located in [Appendix B](#) and prepared by the Engineer

### **5.3 Sidewalks**

Concrete sidewalks shall be constructed in accordance with **Figures S-5, and D-3 to D-4 of [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”](#)**

Design and installation shall be in accordance with Chatham-Kent Specifications located in [Appendix B](#), and prepared by the Engineer.

### **5.4 Watermains**

Design and installation shall be in accordance with Chatham-Kent's requirements and provincial regulation. A network analysis and transient pressure analysis may be required if requested by Chatham-Kent. Watermains and appurtenances shall be constructed in accordance with the approved contract documents prepared by the Engineer.

The minimum design criteria are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” – Part B – Design Guidelines for Watermains.](#)

The materials to be used for watermains are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part D – Materials Specifications.](#)

Watermain construction specifications are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” – Part E – Construction Specifications](#)

Watermain drawing specifications are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part F – Drawing Specifications.](#)

### **5.5 Sanitary Sewers**

Sanitary infrastructure shall be designed and constructed in accordance with the ‘Public Utilities Commission for the Municipality of Chatham-Kent – General Specifications for Water and Wastewater’:

Additionally, the Owner shall maintain all sanitary sewers and appurtenances until assumed by Chatham-Kent.

The minimum design criteria are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part C – Design Guidelines for Sanitary Sewer.](#)

The materials to be used for sanitary sewers are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part D – Materials Specifications.](#)

Sanitary sewer construction specifications are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part E – Construction Specifications.](#)

Sanitary sewer drawing specifications are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part F – Drawing Specifications.](#)

The Engineer shall confirm the availability and location of an appropriate outlet with Chatham-Kent, shall complete the final design and shall obtain Environmental Compliance Approval from the Ministry of the Environment, Conservation and Parks (MECP) prior to construction. Work on private property shall conform to the Ontario Building Code.

#### 5.5.1 Private On-site Wastewater Treatment Facilities

In those instances where land is designated for development in the Municipality of Chatham-Kent in the Official Plan and an extension of servicing from an existing municipal wastewater treatment facility is not available or practical at the time that development wishes to proceed, Chatham-Kent will consider the use of a private on-site wastewater treatment facility in compliance with the relevant Municipality of Chatham-Kent Official Plan policies.

Where a site is approved for a private on-site wastewater treatment facility, Chatham-Kent will require, as a condition of site plan approval, that the Owner agree to connect to the municipal wastewater treatment facility where services are available as determined by Chatham-Kent. Chatham-Kent will also require that the appropriate buy-in fee or development charge be paid by the Owner at site plan approval.

#### 5.6 Storm Sewers / Drainage

Storm sewers and appurtenances shall be constructed in accordance with the approved contract documents prepared by the Owner. Design and installation shall be in accordance with Chatham-Kent Specifications located in [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”](#) and prepared by the Engineer.

The minimum design criteria are noted below:

**Table 1: Storm Sewers / Drainage Design Criteria**

Design Method	Rational Formula
Design Frequency	1 in 5 years storm – MTO - <a href="#">Web based app for retrieving Intensity Duration Frequency Curves</a>
Inlet Time Urban Area	150 minutes required maximum unless agreed to by Chatham-Kent (possibly less depending on catchment size)
Run-off Co-efficient	Post-development to be verified based on the proposed development plan but not less than 0.4 following Ministry of the

Design Method	Rational Formula
	Environment, Conservation and Parks (MECP) recommendations. Chatham-Kent rural pre-development value to be 0.10
Minimum Velocity for Pipes Flowing Full	0.8 metres per second
Manning's Roughness	0.011 to 0.013 (Smooth Wall Pipe) Co-efficient for Storm Sewers
Minimum Cover	1.07 metres
Maximum Manhole Spacing	105 m
Minimum Service Connection Size	Single – 150 mm dia. (longer than ½ of right-of-way width)
Clean Out	All services shall include a Tee and a clean out at the property line. The cleanout shall not project more than 0.3 metres above the ground level.
Pipe Material Sewer Main	The size, type and class of sewer pipe shall meet CSA A257.1 or CSA B182.2 and OPSS 1820 standards.
Private Services	PVC SDR28

Adjacent neighbouring surface water and sub-surface water (tiles) shall be re-routed so that the new development has no adverse impacts on the existing Development and the adjacent neighbouring lands. A plan shall be submitted to Chatham-Kent's Infrastructure and Engineering Services Division for review prior to construction.

All new Developments shall have their downspouts disconnected from the storm sewer systems (splash pads). Required for residential and for all other developments, unless flows are being either controlled or redirected to Stormwater Management facilities.

Semi-detached dwellings and multi-unit townhouses shall have a minimum of two (2) storm sewer service connections and two (2) rear yard catch basins. Minimum of one rear yard catch basin per unit is required (for each).

The Owner shall confirm the availability and location of an appropriate outlet with Chatham-Kent and shall complete the final design and shall obtain Environmental Compliance Approval from the Ministry of Environment, Conservation and Parks prior to construction. Work on private property shall conform to the Ontario Building Code.

Spacing for road drainage - no more than 383 m<sup>2</sup> asphalt catchment area per catch basin.

### 5.6.1 Stormwater Management Facilities

The minimum design criteria are noted below:

The Stormwater Management Plan shall be prepared to address the specific municipal, regional and provincial requirements to control stormwater quantity and quality. [Refer to Ministry of the Environment, Conservation and Parks \(MECP\) website](#): for the Stormwater Management Planning and Design Manual 2003.

Rural pre-development coefficient to be 0.10



In all cases, stormwater quality measures shall be incorporated to address provincial water quality guidelines, including short term measures to control soil erosion during construction of site services.

Single Site Design (Commercial / Industrial / Institutional): Where stormwater quantity controls are required, runoff must be limited to the pre-development peak flow condition for the 1:2 year rainfall events with duration of 24 hours, outlined by the Ministry of Transportation Ontario Intensity Duration Frequency curves for the specific geographic region. For new developments a 1:100 year rainfall event must be contained on-site and released at the pre-condition 1:2 year rainfall event flowrate. A post-construction concentration time of value of 15 minutes shall be used for design. Surface storage in roadways will not be permitted for the 1:5 year rainfall event and must be limited to 300 mm above the catch basin for the 1:100 year event.

Web based app for retrieving Intensity Duration Frequency Curves

Residential: Where stormwater quantity controls are required, runoff must be limited to the pre-development peak flow condition for the 1:2 year rainfall events with duration of 24 hours, outlined by the Ministry of Transportation Ontario Intensity Duration Frequency curves for the specific geographic region. A post-construction time concentration value of 15 minutes shall be used for design.

Surface storage in roadways will not be permitted for the 1:5 year rainfall event and must be limited to 300 mm above the catch basin for the 1:100 year event.

Web based app for retrieving Intensity Duration Frequency Curves

The stormwater management facilities shall be designed to current Best Management Practices and subject to the approval of Chatham-Kent, and the required agencies. It is the responsibility of the Owner / Owner's Engineer to determine which agencies and approvals are required.

The design of the road network should convey the overland flow routing of the major storm event to the stormwater management facility.

On-site measures to control stormwater quantity for industrial, commercial, and institutional developments will be permitted, including temporary parking lot, loading dock, and roof top storage. Storage depths in parking lots and loading docks shall be limited to the depths noted in **Subsection 4.1.11** and 300 mm for the 1:100 year rainfall event.

The lowest opening into a building should be a minimum of 0.3 metre above the calculated on-site 1:100 year storage elevation (or higher if required by other agencies).

Stormwater ponds shall have backflow prevention for outlets into high risk flooding areas. Stormwater ponds shall contain integrated sluice gates to allow for temporary outlet shutoff.

## 5.6.2 Stormwater Pumping Station Design

Pumping stations shall be designed in accordance with Ministry of Environment, Conservation and Parks guidelines and specifications herein. Design and installation shall be in accordance with Chatham-Kent Specifications located in **Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”** and prepared by the Engineer.

During the maintenance period, the Owner will be responsible for all costs incurred by the Municipality that are associated with pump. Hydro, telephone and Security One monitoring services to be set up through Chatham-Kent's Engineering & Infrastructure Services Division for all storm and sanitary pump stations.



Should any major repairs to a pump station that is under maintenance be required, Chatham-Kent will advise the Owner who will be given opportunity to make repairs through their contractor within reasonable time period. Should Owner not carry out repairs within a reasonable time period, as determined by Chatham-Kent, then Chatham-Kent will carry out all required repairs and all costs incurred shall be assessed to and be borne by the Owner.

## 5.7 Sanitary Pumping Stations

Storm and sanitary pumping stations shall be designed and constructed in accordance with the Municipality of Chatham-Kent approved construction drawings and specifications prepared by a Professional Engineer licensed in the Province of Ontario.

Drawings and specifications shall meet the following minimum design criteria. Please note that Chatham-Kent shall reserve the right to amend and/or impose additional requirements to those noted herein at any time.

The minimum design criteria are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part C – Design Guidelines for Sanitary Sewer](#)

The materials to be used for sanitary sewers are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part D – Materials Specifications.](#)

Sanitary sewer construction specifications are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part E – Construction Specifications.](#)

Sanitary sewer drawing specifications are outlined in [Appendix C – “Public Utilities Commission \(PUC\) Watermain and Sanitary Sewer Design Manual” - Part F – Drawing Specifications.](#)

Contemplated changes/deviations/customization of the design/arrangement/configuration depicted in these drawings to suit a specific design/situation/circumstance/location/etc. shall first be reviewed with and approved by Chatham-Kent on a case by case basis prior to implementation.

### 5.7.1 Site Selection

The site shall be accessible from a municipal street and sized to provide for the parking of vehicles used for inspecting and maintaining the station. Access must also be provided for a standby electrical generating system where required. Access shall also be provided for the storage or removal of snow. All access roads and parking areas shall be paved with asphalt.

Minimum lot size shall be based primarily on being able to remove and replace entire station without encroaching on adjacent private property and shall take into consideration a minimum 1:1 soil slope during excavation while meeting the objectives in the paragraph above.

Site shall be graded to ensure proper surface drainage and landscaped to be compatible with the surrounding neighbourhood. Landscaping design shall be submitted and approved by Chatham-Kent for any areas adjacent to road right-of-ways.

Any associated buildings shall be designed to be permanent, durable and aesthetically pleasing and compatible with other buildings in the area.

### 5.7.2 Regulatory Requirements and Submittals

The Owner shall make all applications and submissions necessary to obtain an Environmental Compliance Approval (including addendums) from the Ministry of the Environment, Conservation and Parks (MECP) for all works proposed prior to commencing any work on-site.

Upon completion of the works, Chatham-Kent shall be provided with three (3) copies of a complete & detailed Operating & Maintenance Manual and separate Project Documentation Manual all bound in 3-“D”ring binder(s) that include the following:

- Operating & Maintenance documentation for all components and equipment used on the project including warranty information, commissioning reports and signed letters of certifications from suppliers regarding installation, service and operation.
- Annual maintenance report templates for all control and pump equipment including voltage, current and Megger results from the manufacturer.
- Contingency plans to address potential malfunctions and/or emergency site conditions.
- Operational controls narrative.
- Standard Operating Procedures and/or Operations Manual covering the operation of the pump station.
- Ministry of the Environment, Conservation and Parks (MECP) Certificate of Approvals
- Three (3) copies of full size project “construction record” drawings in both printed form and PDF & AutoCAD electronic formats on USB drive.
- Final electrical inspection certificate from electrical safety authority (ESA).
- Copy of final commissioning report from Engineer.
- All spare parts shall be turned over to the Municipality of Chatham-Kent or its operating Authority.

## 6.0 **STREET LIGHTING, POWER DISTRIBUTION AND OTHER SERVICES**

Design and installation shall be in accordance with Chatham-Kent Specifications located in [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”](#) and prepared by the Engineer.

All materials shall be compliant with Canadian Standards, as a minimum, and suitable for its intended application. The project Designer shall verify all existing services to the best of their knowledge and coordinate all new lighting, power distribution and communication services to avoid conflicts with other trades.

### 6.1 **General Lighting Notes**

1. Street lighting design shall be based on road and pedestrian classification as defined by the authority having jurisdiction. Classifications may be found within the Illuminating Engineering Society of North America standards for roadway lighting (RP-8-00), and luminaire classification system for outdoor luminaires (TM- 15-11), and/or the Transportation Association of Canada guide book. The designer is responsible to review the latest edition of all codes and standards to ensure all lighting levels, intensity and uniformity ratios are achieved. Ratios can also found in [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”](#) .
2. Every effort should be made to align street lights with side lot lines between parcels. Designer shall follow the Municipality of Chatham-Kent cross section details.
3. Electrical ground grid or rods to be installed as per all applicable local codes, regulations and/or standards.
4. Distribution patterns may vary depending on the design application. Other distribution patterns may be accepted upon review of a complete photometric drawing submission to the Municipality of Chatham-Kent provided by the Designer.
5. It is the Designer’s responsibility to ensure the appropriate pole height, class and diameter are specified in order to suit the application and maintain the lighting levels as recommended by standards noted in note 1. If changes to the specified poles noted above are required, the Designer shall contact the Municipality of Chatham-Kent with the Designer’s recommendations to be approved prior to implementation.
6. All new subdivisions and/or roadways shall be designed with LED lighting. Where new phases are constructed off existing subdivisions and/or roadways, contact the Municipality of Chatham-Kent for direction.
7. The Owner is responsible for the illumination of all newly created intersections.
8. The joint Illuminating Engineering Society North America and International Dark Sky Association societies Model Lighting Ordinance Backlight-Uplight-Glare system was implemented to provide a more accurate and consistent rating system for light fixtures that will provide enhanced control with glare and light trespass and will reduce overall light pollution than the conventional full, semi and non “cutoff” rating system. The Backlight-Uplight-Glare system was released as an Illuminating Engineering Society Technical Memorandum TM-15. The Backlight-Uplight-Glare rating system employs zones of intended use and evaluates the desired light fixture by % of total lumens at various angles in specified defined quadrants that represent backlight, uplight and glare.

9. The Designer will attempt to implement fixtures that will be rated in accordance with the joint International Dark Sky Association and Illuminating Engineering Society lighting design guideline to minimize light pollution and to better evaluate the proposed light fixture, utilizing fixtures that are compliant with the ratings of the zone intended for use.
10. Luminaire shall be designed for ease of component replacement and end-of-life disassembly.
11. Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
12. All internal components shall be assembled and pre-wired using modular electrical connections.
13. All materials shall be new.
14. Each LED street light luminaire must include:
  - a. Light Engine complete with driver (power supply) and surge protection.
  - b. Weather-resistant housing.
15. 7 pin photocell receptacle as per ANSI C136.41 and shorting cap/Photocell as required.
16. An optional house side shield shall be available. The shield can attach to the housing or can attach directly to the optical system.
17. Luminaires must be tested, certified and listed as a Qualified Product on the DLC list.
18. Luminaires shall be aesthetically acceptable to the Entegrus Evaluation Committee

## 6.2 Power Distribution

The power distribution system consisting of the primary and secondary power feeders, transformers and underground infrastructure shall be designed in accordance with the appropriate power supply authority requirements. The Owner is responsible to obtain the approval of the appropriate power supply authority prior to construction.

## 6.3 Other Services

Other services such as, but not limited to, voice, data and television shall be coordinated by the Designer unless otherwise advised. These services and associated conduit routing shall be clearly identified in road crossings, on cross-sections, etc.

## 6.4 Light Intensity Standards

1. The following Principles are to be adopted for the lighting of private and public lands, subject to Site Plan approval, in the Municipality of Chatham-Kent:
  - a) Contribute to personal safety
  - b) Support the supervision of secure areas
  - c) Assist in way finding
  - d) Conserve energy
  - e) Preserve the experience of the night sky
  - f) Respect the privacy of residential space
  - g) Respect animal habitat
  - h) Heighten the enjoyment of public space and night time activity
  - i) Apply the above listed guiding principles consistently

2. To insure the provisions of adequate and safe, full cut off lighting levels, bonding for the provision of on-site lighting may be required as a condition of site plan approvals.
3. Lighting plans and photometric data including Illuminating Engineering Society format files (as required) must be prepared, and all lighting be installed and maintained by the Owner, in accordance with lighting plans, to their best ability (for all development sites of 2300 m<sup>2</sup> building lot , or greater) which will be approved and enforced by the Municipality of Chatham-Kent.
4. The Sign By-law 78-2001, (as amended), shall be reviewed with regards to externally lit billboards and electronic changing copy signs and their impact on the night sky and traffic safety.
5. The lighting requirements for public right-of-ways and other publicly owned lands will be reported by Chatham Administration to Council on every application.
6. All Site Plan applications, in their review and approval, shall be consistent with the Guiding Principals in Recommendation and implement as required the techniques including in “Techniques to Implement Lighting Guiding Principles”; **Table 8:** Illumination Requirements and **Table 5:** Guidelines for Structure Lighting in [Appendix B – “Roads, Stormwater and Illumination Design Specifications and Details”](#) and prepared by the Engineer.

#### 6.4.1 Submission Requirements for Outdoor Lighting

- For each site plan requiring submission of an Outdoor Lighting Plan, the Designer must submit the following information as a minimum for review by the Municipality of Chatham-Kent:
  - Location of all buildings, structures, property lines, parking, loading and amenity areas.
  - Location of all lights, poles and transformer units.
  - Mounting height, quantity, orientation and arrangement of all lighting
  - Type of light source
  - Manufacturer’s catalogue information and detail of the fixture.
  - Illumination levels for all proposed fixtures
  - Calculation summary indicating the minimum value, maximum value, maximum-to-minimum ratio and average-to-minimum ratio
  - Submission should include the project name, designer and date whether on a cover sheet or on the drawings itself
  - Include all external lighting to the site under evaluation where it may be considered to be a relevant contribution to the new site
  - Extend photometric analysis past site property lines to evaluate any horizontal illumination that would contribute to light trespass onto neighbouring properties
  - All other relevant information

## **7.0 CONSTRUCTION SPECIFICATIONS PACKAGE – TENDERING**

### **7.1 General**

The Owner shall make reference to the latest Ontario Provincial Standard Specifications (OPSS) and Municipal Specifications in the contract documents for construction of site services, including any amendments and extensions outlined herein. In case of a conflict between Ontario Provincial Standard Specifications (OPSS) and Municipal Specifications, Municipal Specifications shall govern.

### **7.2 Ontario Provincial Standard Specifications**

There are currently no amendments or extensions to the Ontario Provincial Standard Specifications (OPSS).

### **7.3 Municipal Specifications**

Chatham-Kent Municipal specifications are available online through Ontario Provincial Standard Specifications (OPSS) and Municipal Specifications website.

## **8.0 DRAWINGS**

### **8.1 General**

All site or subdivision plans and record drawings and/ or specifications must be submitted, at a minimum, in both AutoCAD format in projection NAD83 (CSRS) UTM Zone 17 and PDF on USB drive to the Municipality of Chatham-Kent. (Please confirm AutoCAD Version with Chatham-Kent). One set of hard copy prints will accompany the digital submission. Submissions will be made within 60 days from the date Engineering and Infrastructure Services has “accepted the services”.

All geographic data must be submitted in a standard real-world coordinate system. The preferred projected coordinate system is NAD83 (CSRS) UTM Zone 17N. If another system is used it must be documented.

### **8.2 File Formats - CAD**

In addition to the minimum digital submission requirements outlined in **Section 8.1**, digital data will also be accepted in one of the following formats (in order of preference):

- a) ESRI Shapefile
- b) ESRI Geodatabase
- c) ESRI Arc/ Info Interchange (e00)

See **[“Digital Information Standard”](#)** on Chatham-Kent website for specific drawings setup and file formats.

### **8.3 Drawing Details**

All data must be clean of undershooting and overshooting arcs (dangles). Polygons must be snapped closed at nodes and lines must snap to one another at nodes. Features which cross map sheets must precisely match each other at the join lines between sheets. Edge matching must be seamless.

### **8.4 Layers**

All data must be thematically organized. There must be separate layers for all different object types (i.e. road edges, road centerlines, watermains, storm sewer mains, sanitary sewer mains, etc.). If a coincident line exists, for example a stream and a parcel boundary, the line must appear in both layers.

### **8.5 Elevation Data**

Features which contain a third dimension or elevation data (z value) must have the elevation value within the attribute data. Elevation data submitted in CAD format must be part of the feature.



## 8.6 Documentation

- a) A list of all files being submitted is required.
- b) CAD data shall include metadata for each layer including within the file. This documentation will provide information on the source of the data, feature type (point, line, polygon, etc.), source date and a general description of what is shown on the layer(s). It should be clearly defined, the period for which the drawings are relative (Construction drawings, Record drawings, etc.).
- c) GIS data submissions must include all items from b. above as well as metadata for each of the featured geographic data attributes. This will include a complete description of each attributes definition as well as a description of what each of the attribute values mean for each field.
- d) Methods used for data collection and the horizontal and vertical accuracy should be documented and submitted for all data deliverables.

## 8.7 Text and Annotation

- a) For CAD submissions, text must be placed in separate layers. Features must not be erased in order to accommodate the placement of text. Text layers must be thematically separate, meaning text associated with watermains should be placed on a layer separate from text associated with parcels.
- b) For GIS submissions, text must be in either a label attribute or an annotation subclass.

## **9.0 MISCELLANEOUS**

### **9.1 Signs**

The Owner will be responsible for the installation of all new regulatory, warning and street name signs in accordance with the Manual of Uniform Traffic Control Devices, through consultation with Municipality of Chatham-Kent Transportation Department, Ontario Traffic Manual Book 7. The Owner shall pay for all required signs including “no parking” signs. The Owner must provide the Municipality of Chatham-Kent with a sign layout plan. This plan must include locations of all signs to be used.

Safety signs required for all multi-use pathways and stormwater management ponds.

The Owner shall be responsible to maintain all existing roadway signs as well as temporary signs required as a result of the construction. No existing signs are to be removed without Chatham-Kent’s written approval.

### **9.2 Barriers and Guard Rails**

Dead end barriers shall be constructed at all temporary cul-de-sacs and/or ends of roadways, which are to be extended in subsequent phases.

### **9.3 Pavement Markings**

The following pavement markings shall be provided or paid for by the Owner within 5 days of final asphalt placement:

- Stop Bars
- Yellow centreline marking to a 30 m distance from stop bars on local roads
- Yellow centreline marking continuous on all collector roads
- Crosswalk marking, where specified in the Subdivision Agreement
- Auxiliary lane markings including arrows, where specified in the Subdivision Agreement

Temporary and permanent pavement markings on the base course and surface course of asphalt shall be organic solvent-based paint including reflective glass beads in accordance with OPSS 1712 and 1750.

### **9.4 Community Mailboxes**

Community mailboxes (CMB) must be coordinated with Canada Post and approved by the Municipality of Chatham-Kent. As well, they must be built on a concrete pad 150 mm thick (150 mm Granular A Base). The concrete pad will be installed by the Owner and will vary according to the size of the super mail box. If possible, community mailboxes (CMB) should be built adjacent to sidewalks and with a car bay for easy access. All mailboxes shall be the community mailboxes (CMB) style and shall be lagged to the concrete pad with bolts. The location of these community mailboxes (CMB) must be established prior to the issuance of building permits.

## 9.5 Tree Planting

The number of trees required for the development is as follows:

- Single Family Residential: 1 - 60 mm calliper tree required per lot
- Semi-detached Residential: 1 - 60 mm calliper tree required for each unit
- Townhouse Units: 3 - 60 mm calliper trees required per 4 units
- Industrial Lots: Determined by CK based on frontage

The Owner will pay Chatham-Kent the amount of \$350 per tree and Chatham-Kent will plant the tree(s). The Municipality of Chatham-Kent will determine the species of the trees. The trees shall be planted to Municipality of Chatham-Kent specifications in the public right-of-way in front of each newly developed lot.

## 9.6 Utility Corridors

The Municipality of Chatham-Kent will require an extra conduit at road crossings to be installed in the same trench as the hydro, Bell and cable for future use. The minimum size of the conduit shall be 100 mm and the conduit shall consist of PVC material. Coordination of all utilities shall be done prior to construction, the corridor will require joint use trenches.

## 10.0 AGENCIES, APPROVALS, AND NOTIFICATIONS

Table 2: Agencies, Approvals, and Notifications

<b>Plan / Permit / Required Study/Notification</b>	<b>Proponent</b>
Draft Plan of Subdivision	Municipality of Chatham-Kent
Final Plan of Subdivision	Municipality of Chatham-Kent
Stormwater Management	Municipality of Chatham-Kent & Ministry of the Environment, Conservation and Parks (MECP), Chatham-Kent Public Utilities Commission
Storm and Sanitary Sewer	Municipality of Chatham-Kent & Ministry of the Environment, Conservation and Parks (MECP), Chatham-Kent Public Utilities Commission
Watermains	Municipality of Chatham-Kent & Ministry of the Environment, Conservation and Parks (MECP), Chatham-Kent Public Utilities Commission
Road Connections and Setbacks	Municipality of Chatham-Kent
Shorelines, Fill and Flood lines	Lower Thames Valley Conservation Authority (LTVCA), Ministry of Natural Resources and Forestry (MNR), and Department of Fisheries and Oceans (DFO)
Shorelines, Fill and Flood lines	St. Clair Region Conservation Authority (SCRCA), Ministry of Natural Resources and Forestry (MNR), and Department of Fisheries and Oceans (DFO)
Shorelines, Fill and Flood lines	Essex Region Conservation Authority (ERCA), Ministry of Natural Resources and Forestry (MNR), and Department of Fisheries and Oceans (DFO)
Fish Habitat	Federal, Administered by Lower Thames Valley Conservation Authority (LTVCA), Essex Region Conservation Authority (ERCA), St. Clair Region Conservation Authority (SCRCA)
Provincial Road Connections and Setbacks	Provincial, Ministry of Transportation Ontario (MTO)
Development in Close Proximity to Railways	Ministry of the Environment, Conservation and Parks (MECP) in consultation with governing Railway Companies
Notification	Chatham-Kent Fire & Emergency Services
Notification	Canadian Coast Guard (re: Navigable Waters)
Notification	Ministry of Transportation (re: Provincial roads)
Notification	Chatham-Kent Police Department
Notification	School Boards (Transportation Services)

