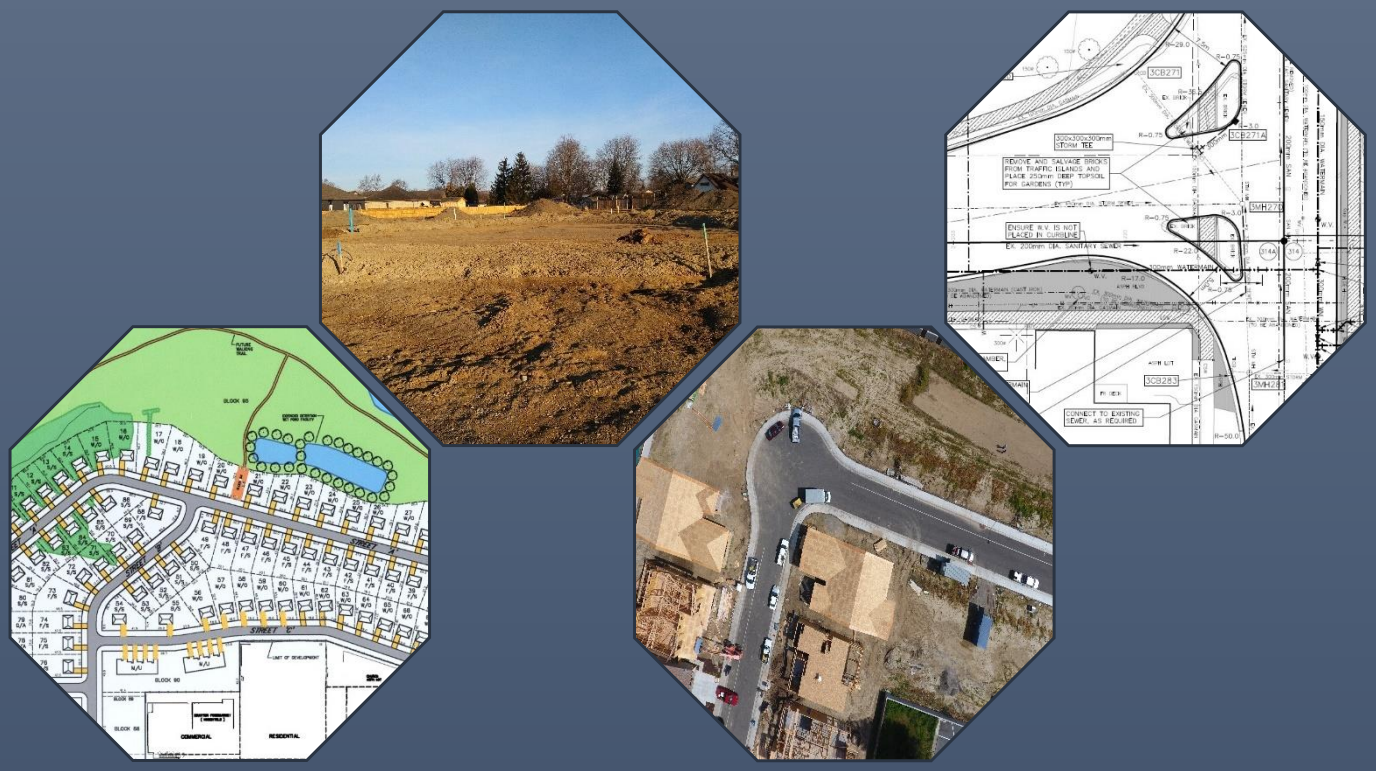

GROWTH PLANNING BEST PRACTICES GUIDE

HURON COUNTY

Prepared by:

BMROSS engineering better communities

COUNTY OF HURON

GROWTH PLANNING BEST PRACTICES GUIDE

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Executive Summary

The intent of this guide is to serve as a reference for concepts and best practices related to planning for growth. The guide includes concepts related to infrastructure, studies and financial considerations that are related to growth. It has been developed to assist municipal and County staff, as well as developers to help build understanding of the processes associated with growth planning. The guide will not address all development issues but is hoped to provide a clear explanation of best practices and consistent approaches to growth planning.

In many of the urban communities, the historically established settlement areas are built out and development is occurring along the fringes, often requiring infrastructure expansions. Identifying the most efficient direction for infrastructure expansions can be difficult for municipalities, especially where capacity and financial resources may be limited.

There is a desire to be proactive with respect to growth planning to attract and accommodate development within Huron County. Municipalities must weigh the financial and staff resources expended in future planning against the existing needs as well as potential benefits.

From a development perspective, developers should be aware of the requirements and expectations of municipalities and approval agencies. Development, whether through a Plan of Subdivision or severing off a few parcels, will require financial investments in infrastructure, studies, and professional assistance including legal assistance. It is expected that 'development will pay for development' and potential developers should do the requisite cost and benefit analysis prior to investing their time and money into a potential development proposal.

This executive summary will outline the concepts that are discussed in further detail in this Guide. The best management practices for each concept can be referenced in Appendix A.

Area Growth Issues

Historically, growth areas in small urban and rural municipalities were identified around the outskirts of the community based on proximity to the community rather than feasibility from a servicing perspective. When there are multiple, distinct future development areas within a settlement boundary, planning and being prepared for development can be a challenge for municipalities. Lands are held privately and some landowners may be unwilling to develop their lands; different developers may hold multiple parcels across the settlement area and wish to develop in multiple directions, which may result in expensive servicing extensions; and some areas may be more difficult to service based on topography, site conditions or the absence of adequately sized infrastructure in the vicinity of the area. Where a municipality has limited capacity, whether financially or from an infrastructure perspective, it may be prudent to consider identifying feasible servicing options to direct future growth. This is most efficiently done through a Master Plan process.

Municipal Class Environmental Assessments

Municipal Class EAs are initiated by municipalities in conjunction with infrastructure projects. Typically, the costs associated with conducting an EA are paid by the municipality. Where an EA is being completed for new infrastructure works that benefit future development, the cost to conduct the EA may be included in development charges. If a municipality is undertaking an EA that benefits a specific development property (e.g. a schedule B EA to construct a new pumping

station to service a new development area), the property owner(s) can enter into a cost-sharing agreement

Master Plans

Through the Municipal Class Master Plan process, infrastructure planning for a group of related projects, infrastructure systems, or integrated systems can be undertaken. Long-term planning of infrastructure needs can be considered for existing and future land uses through the lens of the environmental assessment process. For this reason, some Official Plans for upper tier municipalities include requirements for lower tiers to complete Master Plan studies (often for water and wastewater servicing) to support and guide local Official Plan updates or new Plans.

Master Plans can be tailored to consider and establish broader infrastructure options across large areas and over a longer time frame. The benefits of the Master Plan approach include the ability to integrate Master Plans with planning documents, such as Official Plans, Official Plan updates, Community Improvement Plans and Secondary Plans, as well as to implement projects identified in the Master Plan separately on an as-needed basis.

Integrated Environmental Assessments

The Municipal Class Environmental Assessment (EA) Process allows for the integration of related Planning Act applications and EAs for infrastructure. The intent of combining the two processes is to streamline efforts, avoid the duplication of studies and consultation, and improve environmental protection and land use planning outcomes. Integrated EAs can include infrastructure located on lands within the subject area of the Planning Act application as well as infrastructure beyond that. To consider infrastructure located outside of the lands of the Planning Act application through an Integrated EA, the infrastructure must be directly related to or required by proposed development. Infrastructure that is not related to or required to support the Planning Act application should not be considered through the Integrated EA process.

Other Studies

Prior to the expansion of growth lands, or development on greenfield and brownfield lands, there may be a need to complete studies. Where studies have a more regional scale, it may be possible to integrate preliminary investigations with other studies (e.g. Master Plans, Official Plans) or undertake standalone studies to potentially reduce the level of study required for certain sites, or identify where site-specific studies will be required. If regional studies are undertaken, developers should recognize there still may be site-specific requirements (such as an Environmental Site Assessment) that is their sole responsibility to complete.

Infrastructure Planning Best Practices

Within settlement areas, the availability of sufficient road, water, wastewater and stormwater infrastructure supports growth planning and development. The availability of infrastructure includes not only the physical infrastructure network within the vicinity of development areas, but also must consider downstream networks, treatment and storage components. In new development areas, where growth is proceeding through a Plan of Subdivision or Condominium, the developer is responsible for the installation of local infrastructure. Municipalities must ensure that downstream infrastructure has sufficient capacity to support the development.

Given this, it is important that municipalities take steps to identify potential servicing constraints and opportunities with respect to future growth and plan how to accommodate development in a rationale, cost-effective manner. The planning of future infrastructure must also consider impacts and needs related to the existing systems.

Water and Wastewater Capacity Calculations

Local municipalities should complete capacity calculations for water supply and sewage treatment and keep those calculations current both for the benefit of the municipality and potential developers. Municipalities should also monitor trunk water distribution and sewage collection systems to assess capacity for existing users and potential development. Calculations should be based on existing users, infill lots and any previously approved allocations.

Allocating Capacity

Water and wastewater capacity are limited resources. Municipalities should develop a framework or policy with respect to the allocation of capacity in water supply and/or wastewater treatment facilities for potential development. These polices are often developed by municipal staff, with input from stakeholders and then approved through passage of by-law.

Monitoring Capacity and Allocations

Monitoring water and wastewater capacity and allocations makes it easier for municipalities to understand and answer questions around remaining capacity as well as forecast and plan for future expansions if required. Establishing a process for where and how this information is collected and stored is also beneficial from a municipal staffing succession or transition perspective.

Establishing Timelines Associated with Capacity Increases

The steps and time requirements prior to a capacity expansion will vary based on what level of expansion is required and the existing facilities. These factors will also drive the need for Class EAs and other related studies (e.g. assimilative capacity). If capacity can be increased through upgrades and a rerating within an existing facility, it is expected that the pre-construction work and time need for design and approvals will be less than a large expansion requiring a Schedule C EA, assimilative capacity studies, extensive design needs and approvals.

Pre-Servicing Agreements

When a development is proposed through the Site Plan or Plan of Subdivision/Condominium process, there may be instances when a developer requests permission to install on-site services (roads, watermains, sanitary sewers, stormwater infrastructure) prior to receiving final approval. If the municipality agrees to allow the on-site servicing to proceed, a Pre-Servicing Agreement should be entered into by both parties.

Ultimately, it is up to municipalities to decide if they will consider allowing developers to construct works under a pre-servicing agreement ahead of final approval of the development. There are risks associated with pre-servicing to both the developer and the municipality. From the development perspective, developers should understand and acknowledge that all pre-servicing work is done at their peril and municipalities may not assume responsibility for work that is done as part of the pre-servicing

Cross-Boundary Servicing Agreements

It is not uncommon that development proposals occur near a municipal boundary where services may be available from the neighbouring municipality. Municipalities are encouraged to consider policies and potential agreements with their neighbours with respect to cross border servicing when it comes to planning for infrastructure needs. Cross boundary servicing agreements for hard infrastructure or joint funding agreements for soft services (such as recreation facilities) can result in cost reductions and improve the ability of municipalities to sustain and enhance local services. Cross boundary servicing agreements may also result in economic benefits for both municipalities when servicing supports non-residential growth. For example, if servicing is extended to support a commercial or industrial development in one municipality, the economic spinoff is likely to also benefit the municipality providing services through residential growth.

Major Infrastructure Expansions

The steps and time required for expanding infrastructure will depend on what facilities and what type of expansion is proposed. Some expansions will take less time to implement, where large expansions (e.g. a new well or significant expansion to a sewage treatment plant) will take a number of years to complete. Given this, it is important to understand what type of expansion will be needed and the likely timing of the demand to ensure any required studies, design and approvals can be obtained in advance.

Road and Intersection Improvements

For many development proposals, it is common that intersections and the approaching roads may require improvements with the addition of turning lanes and potentially traffic signals. While it is difficult for municipalities to predict the type of occupancy that may be considered for development areas, it is prudent to be aware of traffic volumes and the extent of existing traffic congestion. Should municipalities know of or identify existing issues with a road section or intersection, they can proactively engage a traffic consultant to evaluate the impacts of future development. Where extensive growth is forecasted, a municipality can also undertake a Transportation Master Plan to identify current and future needs related to road infrastructure

Road and Network Design

Generally, most new road allowances are established through the development processes, most commonly site plans or Plans of Subdivision. Municipalities do have the authority, under the Planning Act, to identify and protect strategic public and private lands from development for the purposes of infrastructure lands such as road allowances. When a municipality wants to establish the location of a new road allowance, generally this is achieved through a Class EA or Master Plan process. For example, if a municipality owns lands designated for an industrial or business park, often the locations of road allowances are established through the EA or Master Plan to service the lands. The road allowances are then incorporated into Official Plan and Zoning Bylaw mapping.

When establishing new road allowances, whether being led by the municipality or a private developer, the constraints posed by significant natural features should be recognized. There may be significant natural features such as woodlands, wetlands or hazard lands at the boundaries of urban areas or within urban areas. These features have significant value as well

as protection from development through Provincial and local planning policies. Generally, it should be assumed that development within these areas and adjacent to them will be limited.

Development Standards

Many municipalities have development or engineering standards that set out requirements or guidelines for design and construction of services across the municipality. Development standards ensure that services are provided in a consistent manner throughout the municipality. Having standards in place allow municipal staff to provide consistent standards for all developments and limit the ability of developers to approach Council with alternative servicing standards. By avoiding alternative servicing standards, municipalities may be able to avoid future costs associated with bringing those services up to the municipal standard. An example is if a developer is permitted to construct an urban road to only a semi-urban standard with ditches, the municipality would later be responsible for the costs to install curb and gutter and bringing the road up to the full urban standard.

It is important that standards are administered and applied uniformly across the municipality. A consistent application of the standards reduces the potential for conflicts, later issues and ensures consistency in the level of service provided. Enforcing these standards also reduces potential future costs to the municipality associated with bringing services up to the municipal standard.

Pedestrian and Cycling Infrastructure

Most municipalities have policies with respect to the provision of sidewalk for pedestrian use in new development. Generally, sidewalk should be provided on one side within residential areas and on both sides of the road in areas adjacent to institutional or commercial properties, or along arterial and collector roads. Connections to trail systems and beach access are vital in locations where available. Municipalities are encouraged to have policies that can be provided to developers to be considered as part of the development proposals.

Stormwater Management

Modern stormwater management facilities require significant capital investment and ongoing operations and maintenance efforts. Facilities need to be viewed on a lifecycle basis where funding for preventative and emergency events need to be available. Where facilities are not funded by the development community funding mechanisms could be federal/provincial infrastructure funding, municipal tax revenue, development cost charges, or a stormwater utility charge. It should be noted that development charges can only be collected towards the capital costs associated with the provision of stormwater facilities, not their maintenance or operation. If a developer constructs a stormwater pond, often the developer pays for the design and construction of the pond and the municipality is then responsible for long term maintenance and operation.

Development Charges

Municipalities can collect development charges against new residential and non-residential development to pay for capital costs associated with infrastructure and services put in place to service growth. The types of services and infrastructure that can be collected through development charges are set out in the Development Charges Act and its associated regulation. Generally, development charges can be collected for capital costs for new and expanded water,

wastewater, stormwater, and transportation infrastructure, in addition to other municipal services such as fire protection, and police services. Through development charges, municipalities can collect for growth-related projects, including studies, that are planned or have been built. The intent of development charges is that ‘growth pays for growth’. When a municipality builds new or expanded infrastructure, often the costs are paid upfront by the municipality and then development charges are collected as growth occurs.

Securities

Municipalities commonly require developers to post securities for the value of works done in new or existing road allowances, as part of subdivision development. These securities ensure developers meet and complete their obligations as set out in development, site plan, or subdivision agreements. Upon meeting the requirements of the subdivision, site plan or development agreement, securities are released back to the developer.

Contents

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Acronyms

EA	Environmental Assessment
ERU	Equivalent Residential Unit
I&I	Inflow and Infiltration
GIS	Geographic Information System
LID	Low Impact Development
LPAT	Local Planning Appeal Tribunal
MTO	Ministry of Transportation
OP	Official Plan
OPA	Official Plan Amendment
OTM	Ontario Traffic Manual
SWM	Stormwater Management
TIS	Traffic Impact Statement

1.0 Introduction

1.1 Purpose

The purpose of this document is to assemble best practices related to growth planning activities. Planning for growth must incorporate consideration of a number of factors, including infrastructure needs, required studies and how growth and growth-related needs are funded and financed.

The Guide is intended as a collection of general and broad best practices that County and municipal staff can consult. There is no one perfect solution to planning for growth that leads to the expected and desired outcomes. Growth planning is inherently difficult, as it can be influenced by larger external market forces, demographics, and many local factors. A municipality can take all the steps to plan for growth, but that does not guarantee growth will occur within the expected timeframes or at all. Adding to that challenge, and given everything that needs to be considered, planning for growth is often a time-extensive exercise.

This is not to say growth planning is not a worthwhile effort. The absence of growth planning can lead to decisions that are made without considering broader impacts or limitations, or an inability for a municipality to support development. County and municipal staff are encouraged to proactively plan for growth as budgets allow. The best practices within this document are intended to provide a semblance of practices and procedures to consider or follow when undertaking growth planning activities. It is hoped that these best practices will allow for proactive growth planning such that development can occur in a manner that is sustainable from an infrastructure, planning and financial perspective.

1.2 Disclaimer

This Guide is an attempt to identify and provide a reference of best practices for County and municipal staff undertaking growth planning activities. This Guide was not developed to capture every potential planning, infrastructure and financing option available, but instead was developed to highlight some best practices that municipalities in the County of Huron can refer to.

It is expected that future updates to this Guide will incorporate additional information as legislation changes.

2.0 Growth Planning and Development

Planning for growth and development is a challenge all municipalities face. In Huron County, the challenge comes from the slow pace of growth, shifting demographics and the scattered nature of development. In many of the urban communities, the historically established settlement areas are built out and development is occurring along the fringes, often requiring infrastructure expansions. Identifying the most efficient direction for infrastructure expansions can be difficult for municipalities, especially where capacity and financial resources may be limited.

There is a desire to be proactive with respect to growth planning to attract and accommodate development within Huron County. Municipalities must weigh the financial and staff resources expended in future planning against the existing needs as well as potential benefits.

From a development perspective, developers should be aware of the requirements and expectations of municipalities and approval agencies. Development, whether through a Plan of Subdivision or severing off a few parcels, will require financial investments in infrastructure, studies, and professional assistance including legal assistance. It is expected that 'development will pay for development' and potential developers should do the requisite cost and benefit analysis prior to investing their time and money into a potential development proposal.

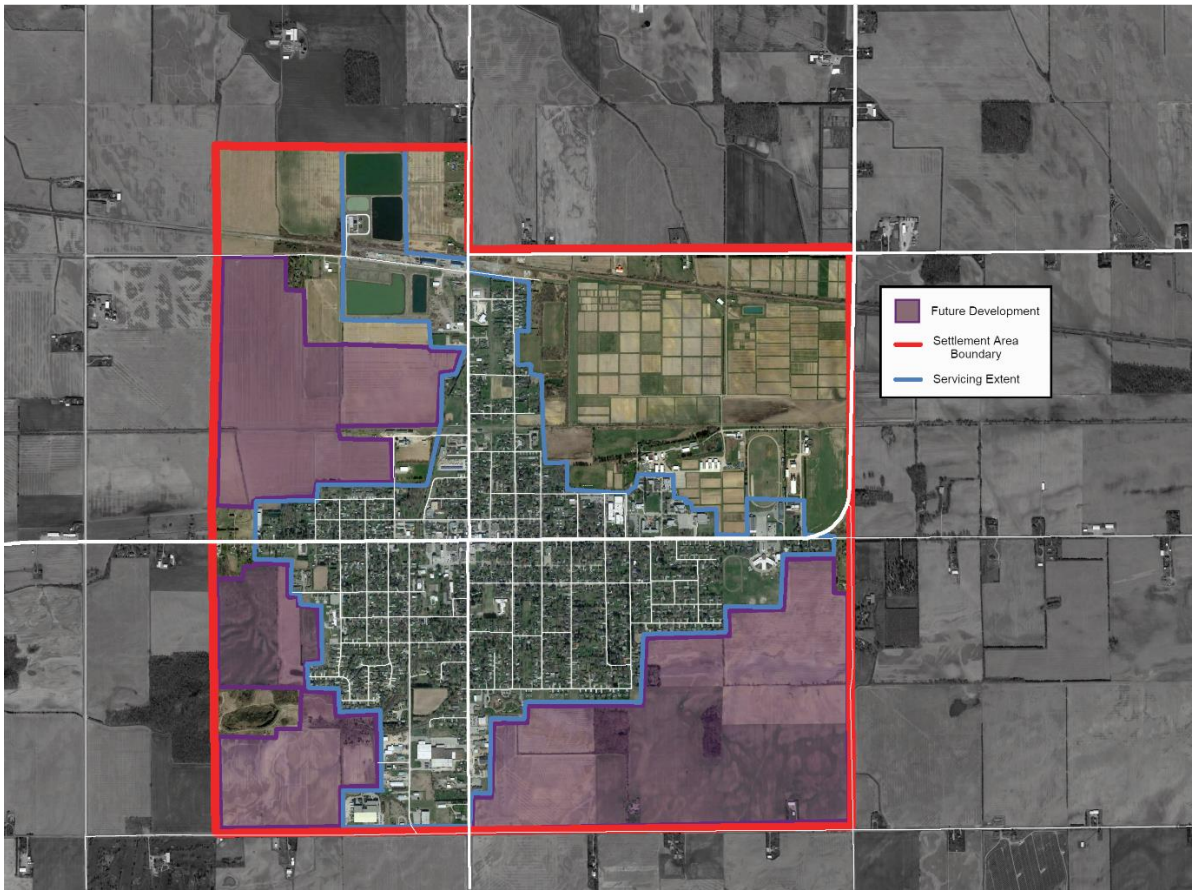
2.1 Growth Planning – Area and Incremental Growth

Two significant challenges in planning for growth are associated with slow growth – efficiently planning for and addressing servicing needs, and how small, incremental developments are addressed.

Historically, growth areas in small urban and rural municipalities were identified around the outskirts of the community based on proximity to the community rather than feasibility from a servicing perspective. The radial nature of where future growth lands are located around communities can make it difficult to expand infrastructure in a cost-effective manner (see Figure 2.1). Larger municipalities have been able to focus development in identified growth areas. The identification of growth areas is based on servicing studies that evaluate and establish the feasibility of the provision of services. At a minimum, these servicing studies identify strategies for water, wastewater and stormwater servicing.

Figure 2.1 is illustrative of many rural communities, where growth occurred in a radial fashion from central intersection and future development lands are not concentrated in one area, but in multiple and opposite ends of the settlement area. In the community shown in Figure 2.1, there are three separate future growth areas, beyond the existing servicing extent, found in the west, southwest and southeast corners of the settlement area. When there are multiple, distinct future development areas within a settlement boundary, planning and being prepared for development can be a challenge for municipalities. Lands are held privately and some landowners may be unwilling to develop their lands; different developers may hold multiple parcels across the settlement area and wish to develop in multiple directions, which may result in expensive servicing extensions; and some areas may be more difficult to service based on topography, site conditions or the absence of adequately sized infrastructure in the vicinity of the area.

Figure 2.1 Example of Urban Settlement Area with Multiple Potential Growth Areas



Where a municipality has limited capacity, whether financially or from an infrastructure perspective, it may be prudent to consider identifying feasible servicing options to direct future growth. This is most efficiently done through a Master Plan process (see Section 3.2), which examines future growth through the lens of existing infrastructure to evaluate a cost effective and feasible future servicing strategy. The results of the Master Plan can then be incorporated into an Official Plan Amendment to better identify growth areas. It is important to note that this approach may result in a conclusion that some of the previously identified growth areas are not feasible or practical to service (i.e., unviable from a development perspective) which may ultimately result in the redesignation of some lands. For example, in the community shown in Figure 2.1, a Master Plan could identify that servicing the southwestern development area is less feasible than other areas and the municipality could focus on planning servicing extensions to the other development areas.

Planning for incremental growth, or individual small developments is also a challenge. Often this type of development proposes the creation of a few lots by consent along an existing, potentially unopened road allowance; at the outskirts of a community beyond the serviced limit; or in hamlet type communities with private servicing. Historically, severances may have been a relatively inexpensive way of creating development lots; however, current planning and development policies place more onus on the developer to ensure services, including roads, are included in the development proposal. For example, severing lots along an unopened road allowance does not mean the road is opened, nor is there any requirement for the municipality

to build the road. Generally, it is expected the developer will be responsible for the design and building of the road, extending the services and providing some degree of stormwater management. For a few lots along an extension of a road, these costs can be significant and may result in lots that are significantly more expensive. If there are only partial services, lots will need to be larger to accommodate private septic systems or wells, which will increase the length of road that needs to be built, again at the developer's cost.

Figure 2.2 shows a proposed development at the edge of settlement area, beyond the current extent of services. Assuming the developer proposes or is only required to extend water services, the lots will need to be large enough to accommodate septic systems. This limits the number of lots and the cost to extend the water service must be recouped from only six lots. If the developer proposed or was required to extend sewage services, the potential number of lots is significantly increased (as shown in Figure 2.3). The servicing costs can then be recouped from more lots and the development is more efficient in terms of land use.

Figure 2.2 Example of Lot Configuration with No or Partial Services

Another issue that may be encountered relating to small, incremental growth is if the development is solely located along one side of the road. If a developer wants to service the lots along only one side of the road, the servicing costs will be spread over fewer lots resulting in a greater servicing cost per lot (see Figure 2.2). Municipalities may contribute to the costs of servicing if the costs could be recouped through development charges, but there is no requirement for municipalities to participate.

Figure 2.3 Example of Lot Configuration with Services

From a municipal perspective, incremental growth is problematic because it can hinder other development areas by creating a barrier to access or services, which can significantly increase the cost of developing the area. It also makes it difficult to address stormwater drainage if lots are developed individually.

To minimize impacts associated with incremental growth, the following is recommended:

- Municipalities should encourage pre-consultation with developers proposing development via consents. The pre-consultation should be considered mandatory.
- If interior lands are unlikely to be developed in tertiary settlement areas (where there are no municipal water or wastewater services), the designation should be removed and the growth designation utilized elsewhere.
- Municipalities should promote the use of Plans of Subdivision for development as a tool to achieve planning outcomes.
- Multiple landowners may wish to work cooperatively in order to develop areas in a coordinated, cost-effective manner for all parties.
- Municipalities should endeavour to avoid partial services within settlement areas.

3.0 Environmental Assessment and Study-Related Best Practices

3.1 Municipal Class Environmental Assessments

Under the Environmental Assessment Act, municipal infrastructure projects are required to follow the Municipal Class Environmental Assessment (Class EA) process. The Class EA process is a planning framework to evaluate alternative solutions, environmental impacts and outline mitigation measures for all types of municipal infrastructure projects, including those involving roads, water, sanitary sewage, stormwater and transit. This includes the construction of new infrastructure, repairs, replacements, upgrades, enlargements and expansions.

Municipal projects are categorized into schedules under the Class EA, and the schedule determines the level of investigation required. The schedules are:

- A – pre-approved projects,
- A+ – pre-approved, but the public must be advised prior to implementation of the projects,
- B – requires evaluation of alternative solutions, potential environmental impacts and mandatory consultation with the public, stakeholders, First Nation and Métis communities and review agencies, and
- C – requires evaluation of alternative solutions, alternative designs, potential environmental impacts and mandatory consultation with the public, stakeholders, First Nation and Métis communities and review agencies.

Municipalities are the proponent of Municipal Class EAs and they are required to identify the applicable schedule and complete the appropriate level of investigation. Figure 3.1 provides some examples of types of projects for each schedule. Schedules are determined based on the specifics of a project, so it is difficult to provide generalizations on what types of projects fit within each schedule. For example, increasing the capacity of a pumping station can be either a schedule A or B project depending on how capacity will be increased. For this reason, municipalities are encouraged to review schedules carefully or contact a consultant to ensure the proper schedule and process is being followed. Generally though, new infrastructure in undeveloped areas requires a schedule B Class EA at minimum.

Municipal Class EAs are initiated by municipalities in conjunction with infrastructure projects. Typically, the costs associated with conducting an EA are paid by the municipality. Where an EA is being completed for new infrastructure works that benefit future development, the cost to conduct the EA may be included in development charges. If a municipality is undertaking an EA that benefits a specific development property (e.g. a schedule B EA to construct a new pumping station to service a new development area), the property owner(s) can enter into a cost-sharing agreement.

Figure 3.1 Examples of Projects for the Schedules Under the Municipal Class EA Process

3.2 Master Plans

Another approach to planning and implementing municipal infrastructure is the Municipal Class EA Master Plan process. For the purposes of this document, a Master Plan is a study that follows the Master Plan approach as identified in the Municipal Class Environmental Assessment. Master Plans in this context deal with municipal transportation, water, wastewater, stormwater and transit infrastructure. This is the Master Plan process that must be followed to allow infrastructure to proceed to implementation. Municipalities may undertake other types of Master Plans such as a Parks Master Plan, Cemetery Master Plans, or Waterfront Master Plans. These types of Master Plans are typically long-term plans or a vision for overall development, guidelines, recommendations and design considerations but do not follow the Municipal Class EA process. A Class EA is required to implement infrastructure works identified within this type of Master Plan.

Through the Municipal Class Master Plan process, infrastructure planning for a group of related projects, infrastructure systems, or integrated systems can be undertaken. Long-term planning of infrastructure needs can be considered for existing and future land uses through the lens of the environmental assessment process. For this reason, some Official Plans for upper tier municipalities include requirements for lower tiers to complete Master Plan studies (often for water and wastewater servicing) to support and guide local Official Plan updates or new Plans.

Master Plans can be tailored to consider and establish broader infrastructure options across large areas and over a longer time frame. The benefits of the Master Plan approach include the ability to integrate Master Plans with planning documents, such as Official Plans, Official Plan updates, Community Improvement Plans and Secondary Plans, as well as to implement projects identified in the Master Plan separately on an as-needed basis.

Master Plan Examples

East Ridge Business Park Servicing Master Plan (Brockton)
Kincardine Business Park Servicing Master Plan
Town of Erin Servicing and Settlement Master Plan
County of Bruce Bridge Master Plan
North Huron Water and Wastewater Servicing Master Plan

Master Plans, under the Class EA process, must complete at least the first two phases of the EA process. Depending on the level of detail of the study, a Master Plan can meet the requirements for the implementation of schedule B projects

and schedule C projects. Master Plans can also be completed in conjunction with Planning Act applications using the Integrated Approach (see Section 3.3). This approach is often used in association with a new OP, or OPA with unserviced areas. The Integrated Master Plan approach allows for infrastructure alternatives to consider land use planning and servicing issues. It also allows for a municipality to establish infrastructure needs and justifications, for future implementation per a phasing plan or when timing and funding allow.

A Master Plan may be specific to a certain type of infrastructure, such as a Transportation Master Plan, or evaluate needs and alternatives for integrated systems, such as water and wastewater. The size of an area and scope of work may also influence what is examined as part of the Master Plan. A Master Plan for a new business or industrial park, or expansion of an existing one, would most likely consider all infrastructure needs as the scope and scale is geographically limited. Common examples of types of Master Plans include:

- Water and Wastewater Servicing Master Plan,
- Transportation Master Plan,
- Bridge Master Plan,
- Servicing Master Plans for a business park, industrial park, or growth area,
- Stormwater Management (or Drainage) Master Plan.

Figure 3.2 shows four different road configurations for a business park that were identified and evaluated through a Master Plan process for a Business Park. Evaluating the road network options through the Master Plan process allowed for consideration of potential lot arrangements and sizes; connections with existing and future roads; watermain, sewer and stormwater piping requirements or constraint; impacts to existing development and traffic flow. These options can also be examined in terms of phasing to allow for phased and directed growth. The Master Plan approach allowed these factors to be considered and evaluated over a large spatial area and in relation to existing development. While lot configurations are not established as part of the Master Plan, understanding what infrastructure is required and where, allows municipalities to plan infrastructure works and identify strategies to finance the works.

When to Use Master Plans

Master Plans can be completed as stand-alone studies or integrated with other long-term planning activities. If the timing of initiating a Master Plan aligns with the start of an Official Plan update, amendment or Secondary Plan, it would likely be appropriate to use the Integrated Approach. If the Official Plan, or other long-term planning activity have recently been updated or completed, a Master Plan approach can still be used to identify existing and future long-term infrastructure needs based on the current land use designations in the Official Plan and other planning documents.

A Master Plan can be initiated at any time. If a municipality wishes to examine existing and future infrastructure needs, the Master Plan approach can be utilized. A Master Plan approach can also be utilized for infrastructure expansions into unserviced and undeveloped areas, with more of a focus on future infrastructure. The investigations completed as part of the Master Plan process may also include studies that support or can be utilized by future development, including archaeology, stormwater management, and natural environment studies.

Figure 3.2 Examples of Road Configurations Evaluated Through a Master Plan

Master Pans are best used to examine servicing options over larger geographic areas (i.e. not for site specific needs). A Master Plan can examine a single infrastructure service type or multiple, related systems to identify feasible servicing strategies for existing and future land uses. A Master Plan can identify future infrastructure needs to service new growth, including 'downstream' needs such as increased capacity at pumping stations and treatment facilities. The complexity of a Master Plan can be tailored in terms of scale and scope, such they can be completed at a high-level to support future studies and land use planning decisions or detailed enough to allow identified infrastructure projects to proceed to implementation.

When considering Master Plans, utilize the following best practices:

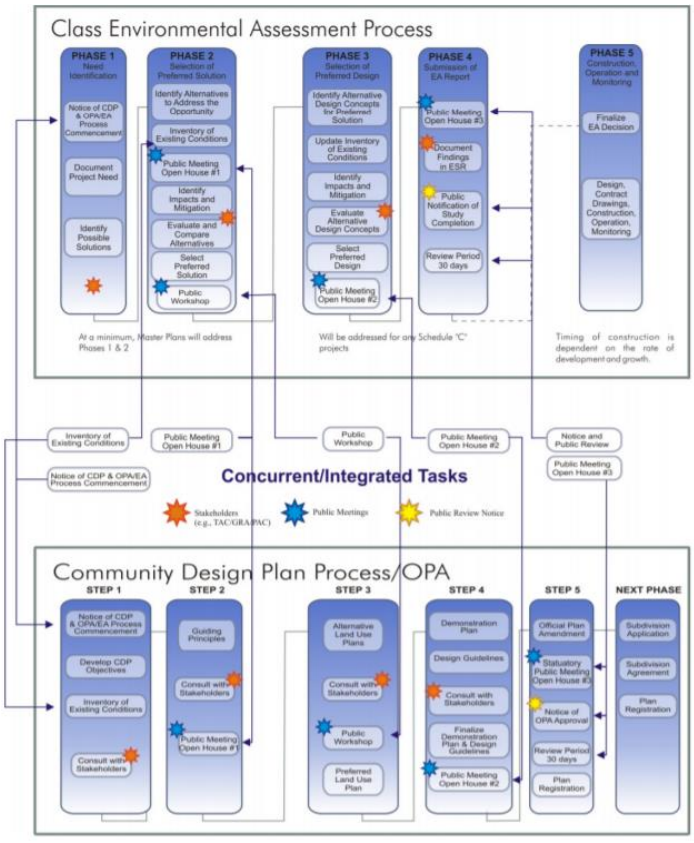
- Identify the scale and scope early. For multiple, large complex systems, it may be more efficient to consider separate Master Plans. For defined areas, it may be possible to consider multiple infrastructure services in one Master Plan (e.g. a Master Plan to service a business park).
- Consider if the Master Plan can be integrated with an Official Plan Review, Official Plan Amendment, or Secondary Plan. Integrating the investigations completed as part of the Master Plan can help inform land use planning decisions.

- Identify the need for Master Plans that will benefit future growth. Municipalities may be able to fund a portion of the costs to complete a Master Plan (or plans) through development charges.
- Identify the level of detail appropriate for the Master Plan. If a high-level, broad Master Plan approach is taken, future site-specific studies may be required. Identifying the level of investigation early will help ensure that the appropriate requirements under the Municipal Class EA process are met.
- Large and complex Master Plans, or Master Plans completed with a high level of detail will take a proportional amount of resources and time to undertake.
- When a Master Plan is completed, it is important to update it on a regular, or as-needed basis. Master Plan Update studies can be undertaken to help ensure the Master Plan is current and aligned with current land use planning and infrastructure needs.
- Incorporate Master Plan findings, recommendations and phasing plans into long-term planning documents and budget plans.
- Where private developers may benefit from the completion of a Master Plan, there may be an opportunity for cost-sharing. A Master Plan may include other studies (archaeology, natural heritage) that may benefit developers.

3.3 Integrated Environmental Assessments

The Municipal Class Environmental Assessment (EA) Process allows for the integration of related Planning Act applications and EAs for infrastructure. The intent of combining the two processes is to streamline efforts, avoid the duplication of studies and consultation, and improve environmental protection and land use planning outcomes. At the end of a successful Integrated EA, the requirements under the Planning Act and Environmental Assessment Act are both met. Figure 3.3 shows the concurrent steps in an Integrated Master Plan and Community Design Plan/OPA.

Figure 3.3 Integrated EA Process

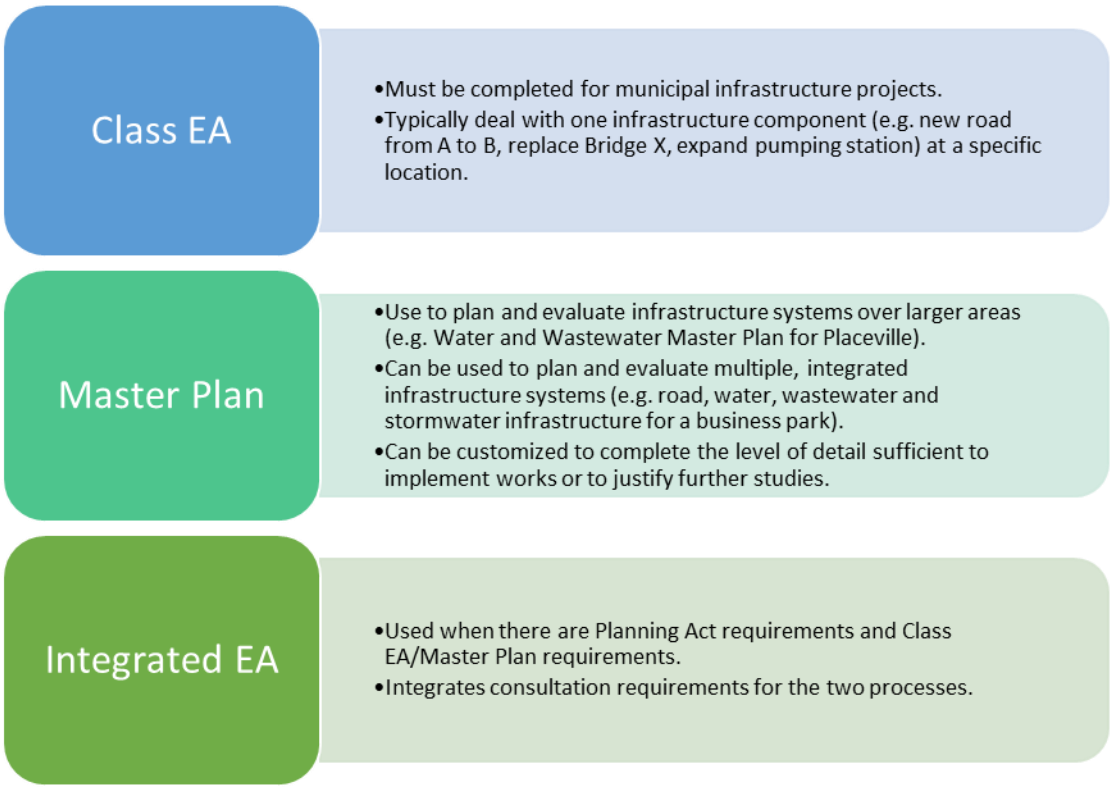


Source: Fernbank Community Design Plan, Transportation Master Plan

An Integrated EA can be carried out by a single proponent (e.g. a municipality or private developer) or through a co-proponent arrangement between a number of partners. For the infrastructure component of an Integrated EA, the appropriate number of phases of the Class EA process must be completed. If the infrastructure is a schedule B or C, the

Integrated EA must address Phases 1-2 or 1-4 of the Class EA process respectively. This includes meeting the documentation and consultation requirements for the Class EA process. The consultation and timing requirements under the Planning Act also must be met. A comparison of the general use of Class EAs, Master Plans and Integrated EAs is provided in Figure 3.4

Figure 3.4 Comparison of Class EAs, Master Plans and Integrated EAs



Integrated EAs can include infrastructure located on lands within the subject area of the Planning Act application as well as infrastructure beyond that. To consider infrastructure located outside of the lands of the Planning Act application through an Integrated EA, the infrastructure must be directly related to or required by proposed development. Infrastructure that is not related to or required to support the Planning Act application should not be considered through the Integrated EA process.

The infrastructure works associated with an Integrated EA process cannot be implemented until the Planning Act application is approved. If the Planning Act application is appealed, the EA requirements are not met until a decision from LPAT allows the project to proceed. When an Integrated EA process is completed, the project is subject to the review requirements associated with the Planning Approval, such as deadlines to meet the conditions of a draft Plan of Subdivision, not the 10-year time lapse associated with Class EAs.

When to use Integrated EAs

The Integrated EA process can be used when the proponent(s) have Planning Act and Municipal Class EA requirements to meet. The types of Planning Act applications that can be completed through the Integrated EA process include the following:

- Official Plan updates,
- Official Plan amendments,
- Secondary Plans,
- Community Improvement Plans,
- Plans of Subdivision,
- Plans of Condominium, and
- Some Site Plan Approvals.

Zoning By-law amendments cannot use the Integrated Approach.

Generally, these are typical situations in which an Integrated Approach could be considered:

- A municipality is undertaking a Planning Act application with infrastructure requirements, or
- A private developer initiates a Planning Act application that has an infrastructure component (either outside the development areas or within it).

If a municipality is undertaking an Official Plan review, Official Plan amendment, Secondary Plan or Community Improvement Plan, it may be appropriate to integrate the planning application with a Master Plan or Class EA for infrastructure components (see Figure 3.5). Integrating the processes at this scale provides the opportunity for the municipality to designate land uses in conjunction with determining how those lands will be serviced. Under this approach, it allows for the analysis of the most efficient and effective means of servicing. Site-specific Class EAs may be required later for any Integrated EAs that followed Master Plan Approaches 1 (for schedule B or C EAs) or 2 (for schedule C EAs); however this approach does make it less likely that further integrated studies would be needed at the Plan of Subdivision or Condominium stage. This is because the feasibility and servicing needs have already been addressed and decided upon. The advantage of utilizing the integrated approach for Official Plan Amendment or Secondary Plans is that it allows for land planning decisions (such as where new growth area should be) to be made based on the most feasible infrastructure servicing options. It also provides a more efficient and cost-effective way of conducting consultation related to the growth planning and the infrastructure components, by eliminating the need to conduct separate consultations.

Integrated EA Examples

Southwest Courtice Secondary Plan Update
Southeast Woodstock Settlement Area Secondary Plan and Servicing Strategy

The following is an example of the steps that would be taken to integrate infrastructure planning and development of a secondary plan:

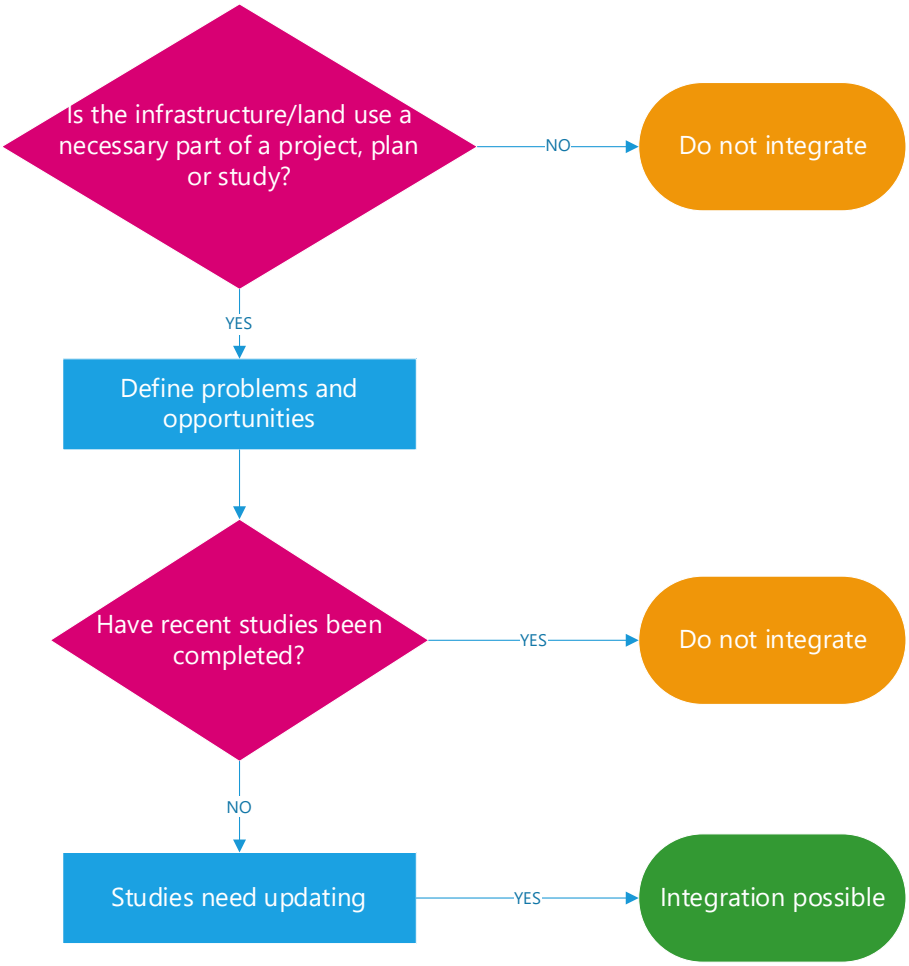
I. Identify issues and opportunities (for land use and infrastructure)
    - Issue Notice of Commencement (for planning and Class EA component)

II. Identify and evaluate land use and the infrastructure needs
    - Identify land use options and infrastructure to support each option

- Evaluate land use options and associated infrastructure needs
- Host a public meeting
- Identify the preferred infrastructure solution and land use plan
- If Schedule C infrastructure projects are identified – alternative designs for infrastructure must be evaluated.
- If the infrastructure projects are Schedule B, the OPA can go before Council for adoption (if OPA approved, Schedule B projects are considered approved)

III. Issue Notice of Completion for EA and Notice of Option for Secondary Plan

Figure 3.5 Process To Determine if Integrated Approach is Appropriate for Municipal-led Infrastructure and Planning projects



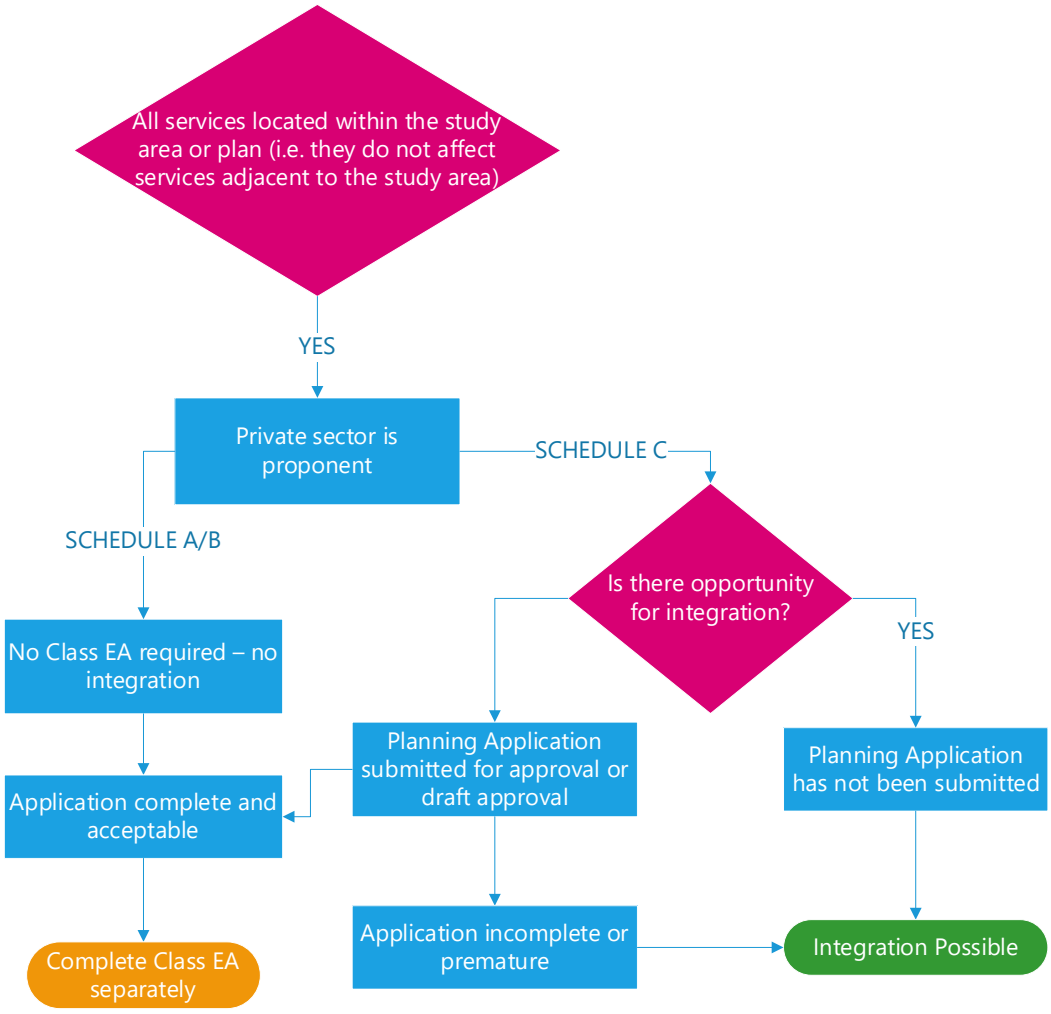
Adopted from: A Guide to Coordinating Integrated Planning Processes, PM Hubbard and Associates

For private developers, an Integrated Approach may be appropriate if the proposed development includes a Planning Act application in addition to a Schedule C EA (see Figure 3.6). This would most likely be the case for large plans of subdivision that require new or major expansions to water treatment and wastewater treatment infrastructure.

In instances where a private development impacts or affects municipal infrastructure, it may be beneficial to consider the Integrated Approach through a shared approach. If the municipality

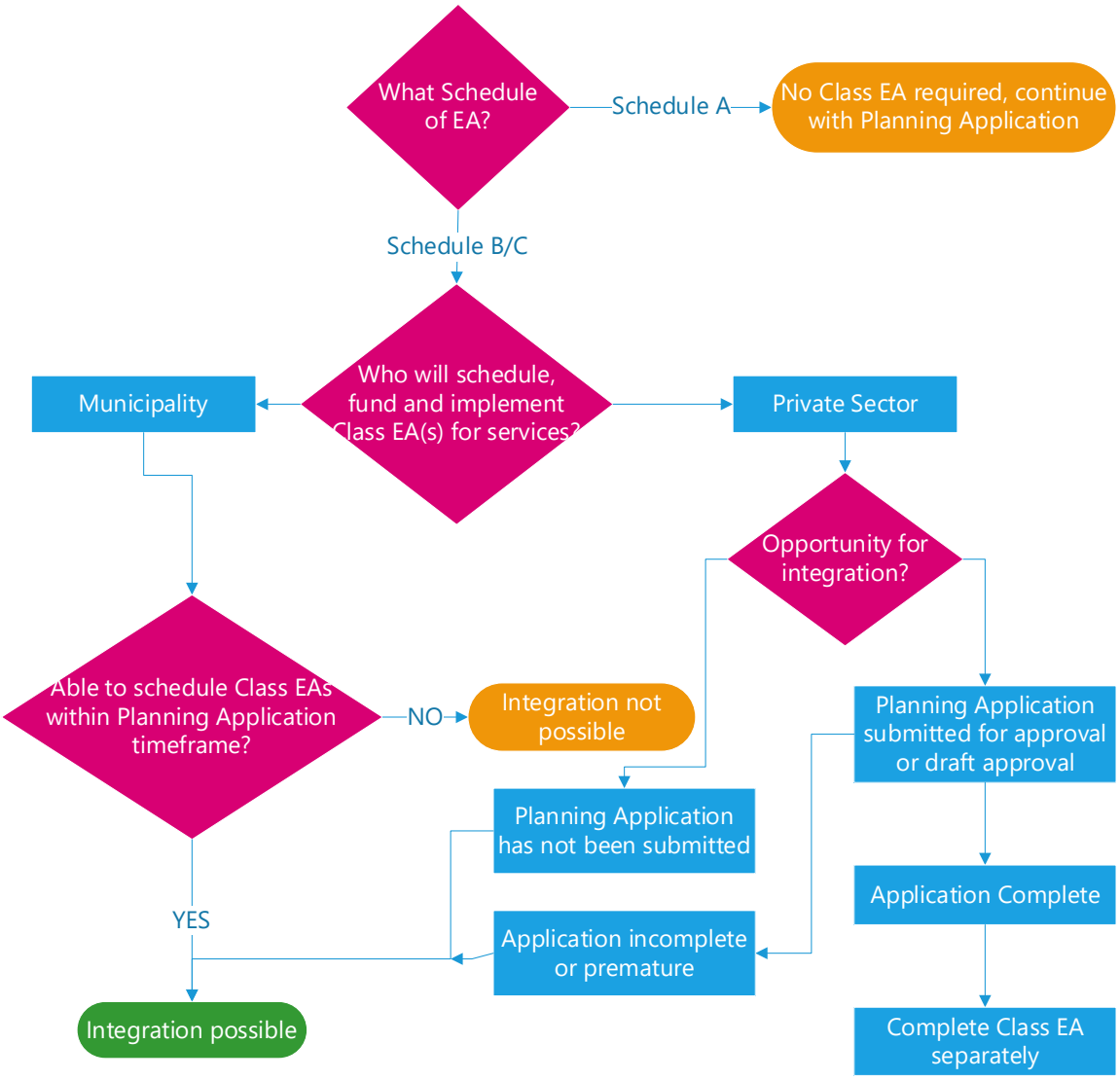
will be responsible for the works constructed by the private sector, the municipality can be the proponent; if the private developer and municipality both benefit from a project, they may become co-proponents; or alternatively, the municipality may wish to proceed as the lead proponent. Generally, a municipality may wish to undertake an Integrated EA with a private developer (either as the proponent or co-proponent) when a development proposal requires a Schedule B or C EA for infrastructure outside of the development proposal area. In such cases, the municipality would enter into an agreement with the private developer regarding funding of the Integrated EA process (see Figure 3.7).

Figure 3.6 Process To Determine if Integrated Approach is Appropriate for Developer-led Infrastructure and Planning projects



Adopted from: A Guide to Coordinating Integrated Planning Processes, PM Hubbard and Associates

Figure 3.7 Process To Determine if Integrated Approach is Appropriate for Joint Municipal and Developer Planning and Infrastructure Projects



Adopted from: A Guide to Coordinating Integrated Planning Processes, PM Hubbard and Associates

The Integrated Approach may be used to ensure land use plans are developed in conjunction with infrastructure needs. Combining infrastructure and land use planning allows for development of a plan that reflects long-term needs from a community perspective and the ability of a municipality to provide the necessary infrastructure. When a municipality and/or private developer is going to undertake an Official Plan, Official Plan Amendment, Secondary Plan, Community Improvement Plan, Plan of Subdivision or Plan of Condominium, and there is a need for infrastructure to support the development, an Integrated Approach can be considered.

When considering an Integrated Approach, the following best practices should be considered:

- The Southwest Region Regional Office of the Ministry of Environment, Parks and Conservation must be consulted early when a proponent is considering utilizing the Integrated Approach.
- When considering implementing an Integrated Approach, the proponent is to consider:
    - Timing of the planning application and overall project schedule. If the timelines for the planning application and infrastructure environmental assessment cannot occur concurrently, it may not be appropriate to use the Integrated Approach.
    - Identifying the studies (e.g. archaeology, natural heritage) that will be required as part of the Class EA and planning processes can assist in determining timelines and cost sharing needs.
- Private developers to consider:
    - Consulting with the Municipality to determine if there are any Schedule C infrastructure requirements (e.g. road, water or wastewater) within the planning application area, or schedule B or C infrastructure projects outside the planning application area that are required to support the development.
    - Depending on the infrastructure required, being co-proponents with the Municipality within the Integrated Approach.
    - Consulting with the Municipality to ensure the proposed approach meets both the requirements of the Planning Act and the Environmental Assessment Act.
- Prior to undertaking an Integrated Approach, municipalities to consider:
    - Developing a strategy or protocol to identify situations when the Municipality will consider assuming the role of proponent and/or co-proponent with private developers. Instances when a municipality may consider being a proponent or co-proponent include:
        - When the Municipality will be ultimately responsible for the works constructed by a private developer;
        - When a project has the potential to impact adjacent municipal services; or
        - When a project will have mutual benefits to the Municipality and a private developer;
- Establish early in the Planning Application process if an integrated approach is appropriate. The Integrated Approach is most appropriate when planning and the infrastructure environmental assessment activities can be planned jointly and concurrently.
    - If one process started before the other, it may be more appropriate to consider a coordinated approach, which would follow separate processes.
- Determine the proponent(s) early in the process.
- If infrastructure studies have been recently undertaken (e.g. a Water or Wastewater Master Plan), it may not be cost-effective or efficient to utilize the Integrated Approach if the studies have already identified infrastructure needs and/or completed a sufficient level of investigation to implement identified infrastructure projects.
- Prior to starting an Integrated Approach, it is important to understand the timing and budget requirements. If the Approach includes a private developer and the Municipality being co-proponents, both parties must understand the potential time required to complete the process and expected timelines. At this point, cost-sharing is to be determined, if applicable.

- When there are co-proponents, cooperation is key as both parties must share information in a timely fashion and provide input within agreed upon timelines.

3.4 Other Studies

Prior to the expansion of growth lands, or development on greenfield and brownfield lands, there may be a need to complete studies. These studies may relate to site specific conditions or proposed land uses, or more regional factors. Where studies have a more regional scale, it may be possible to integrate preliminary investigations with other studies (e.g. Master Plans, Official Plans) or undertake standalone studies to potentially reduce the level of study required for certain sites, or identify where site-specific studies will be required. If regional studies are undertaken, developers should recognize there still may be site-specific requirements (such as an Environmental Site Assessment) that is their sole responsibility to complete. They may also be required to provide an update or report to confirm or support the findings within the regional study. Developers are always encouraged to pre-consult with municipalities and County Planning & Development staff to identify potential study requirements as early as possible.

There are certain studies that may be completed at a broader, more regional level. These studies include:

- Stormwater Management,
- Archaeological Management Plan,
- Traffic Studies,
- Built Cultural Heritage Evaluation, and
- Natural Heritage.

A municipality may undertake regional studies to support growth, or in conjunction with other studies (e.g. Master Plans). When studies are undertaken that benefit growth, there is an opportunity to include the costs of these projects in development charges. Alternatively, a municipality may enter into an agreement with benefiting property owners. Where regional studies have been completed, municipalities should make the studies available to property owners and developers. Developers can also work cooperatively with each other to undertake required studies.

Completion of the above-noted studies is most likely to broadly identify areas where further investigations will be required or provide the basis for site-specific investigations. A regional stormwater management plan will examine stormwater management requirements at a subwatershed level and thereby identify the need for specific stormwater infrastructure needs or requirements. This makes clear the future study needs at a site-specific scale. Generally, these studies are done at a municipal scale – recently, the Municipality of Middlesex Centre completed a stormwater master plan for all the settlement areas in the municipality. The Master Plan was undertaken to consider stormwater management strategies in a more cohesive manner.

Similarly, an Archaeological Management Plan and/or cultural heritage evaluation may be done to identify known archaeological or heritage sites and areas where the criteria are met to require the completion of site-specific studies. It does not preclude areas from development but makes clear the need for additional studies before development can occur. Many larger centres have completed Archaeological Management Plans at a regional (County) level. These Plans, such

as the one recently completed by the Simcoe County and currently underway in Bruce County, identify existing archaeological resources and areas where there is potential for resources. Additionally, these studies include updates to planning policies and guidelines to allow for a consistent approach to integrating archaeological assessments into the planning processes across the region.

A regional or broad-scale traffic assessment can be used to provide a baseline for future studies with respect to traffic counts and turning movements. It may also identify intersections or areas that may be impacted by future development. Generally, these studies are done as part of Transport Master Plans to identify future corridors and where improvements may be needed based on projected future traffic levels.

Increasingly, regional natural heritage studies are being completed in conjunction with Official Plan Updates. These studies typically identify significant natural features, including wetlands, woodlands, Areas of Scientific and Natural Interest, wildlife areas and corridors. These studies are important in identifying areas where development should be avoided. The also provide clarification on what areas may be considered ‘adjacent’ to existing natural heritage features.

The following are considered best practices for development related studies:

- Municipalities to consider broad, larger scale studies to provide baseline context and information for site-specific studies.
- If municipalities elect to undertake studies that will benefit future growth, those studies should be included in development charges.
- Some studies may be undertaken in conjunction with other studies (e.g. Master Plans or Official Plan Updates). The studies should be made available or shared with developers.
- Where regional studies have been completed, municipalities should consider if and how updates will be undertaken.
- Where developers will benefit from the completion of regional studies by municipalities, developers should consider financial contributions for the work completed.
- Developers must recognize there still may be requirements for site-specific studies.
- Developers may find efficiencies if studies are jointly undertaken for adjacent properties.
- When studies are done at a County or municipal level staff should consider adding mapping layers to existing GIS tools or alternatively, making the maps available for public review.

4.0 Infrastructure Planning Best Practices

Within settlement areas, the availability of sufficient road, water, wastewater and stormwater infrastructure supports growth planning and development. The availability of infrastructure includes not only the physical infrastructure network within the vicinity of development areas, but also must consider downstream networks, treatment and storage components. In new development areas, where growth is proceeding through a Plan of Subdivision or Condominium, the developer is responsible for the installation of local infrastructure. Municipalities must ensure that downstream infrastructure has sufficient capacity to support the development.

Given this, it is important that municipalities take steps to identify potential servicing constraints and opportunities with respect to future growth and plan how to accommodate development in a rationale, cost-effective manner. The planning of future infrastructure must also consider impacts and needs related to the existing systems.

One of the challenges of planning for future infrastructure is that the design lifetime of many of the major components extends beyond the 25-year planning horizon. Infrastructure decisions made in the past can have long term implications for planning. Similarly, infrastructure investments made now will impact planning decisions in the future. Given this inequity between timeframes, it is important that planning and infrastructure needs are integrated and given consideration through long-term studies that consider both.

For the purposes of this guide, this section will examine best practices related to water and wastewater capacity and allocation, cross boundary servicing, major infrastructure expansions, transportation infrastructure and stormwater infrastructure.

4.1 Water and Wastewater Capacity Calculations

Local municipalities should complete capacity calculations for water supply and sewage treatment and keep those calculations current both for the benefit of the municipality and potential developers. Municipalities should also monitor trunk water distribution and sewage collection systems to assess capacity for existing users and potential development. Calculations should be based on existing users, infill lots and any previously approved allocations.

The availability of accurate, up to date information will help expedite the calculation of uncommitted reserve capacity. For reference, the following figure summarizes the basic information and factors that should be considered in the calculation of committed and uncommitted capacity.

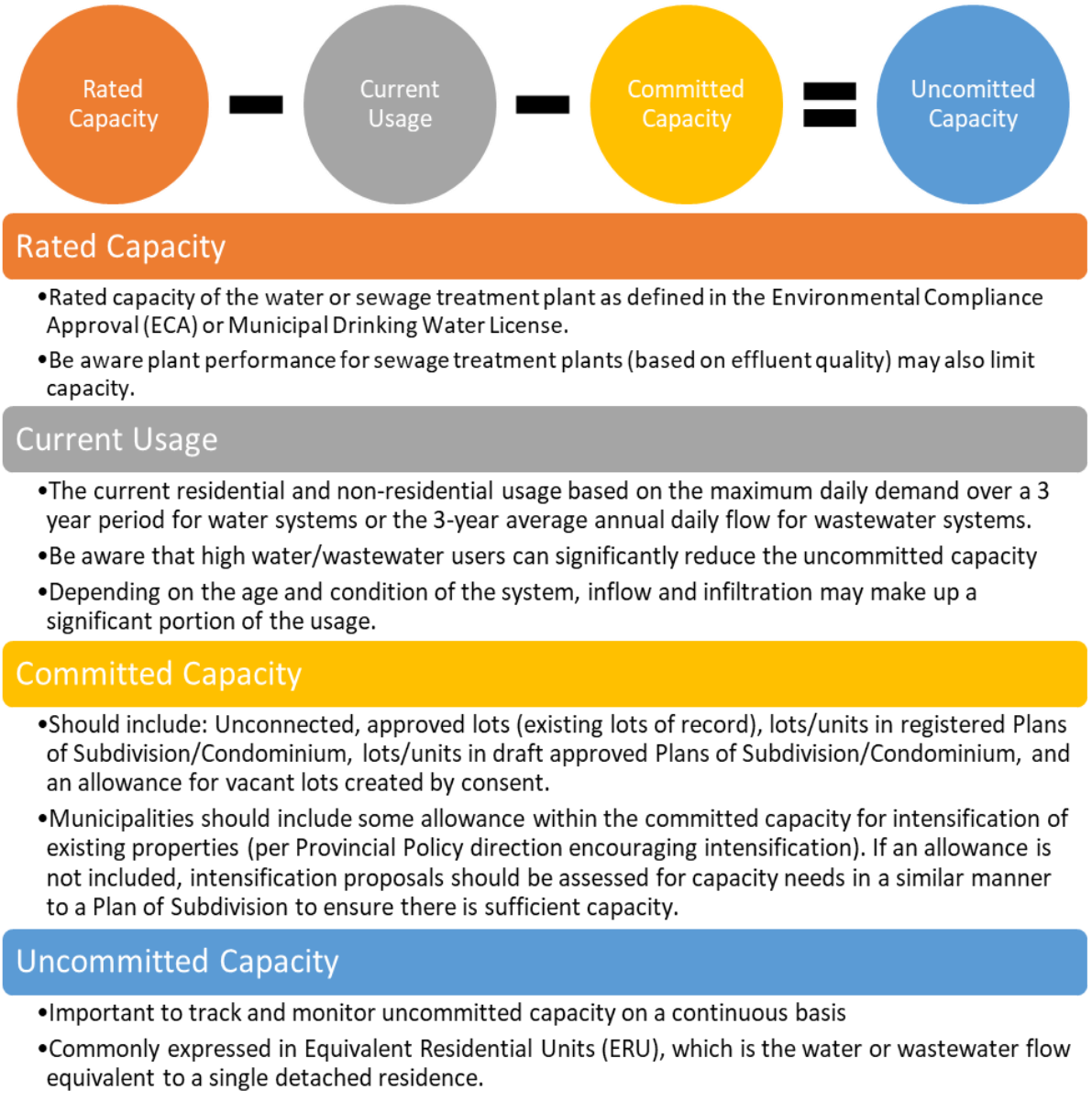
When calculating water and wastewater capacity, the following best practices should be followed:

- Recognize that other factors outside of the rated capacity may also limit development potential, including pumping station capacity, collection and distribution infrastructure.
- Do not use flow data from a single year in a capacity calculation. Use flow data from the last 3 years to accommodate variations that may be the result of increased or decrease usage, and inflow and infiltration.
- Sewage treatment plants and pumping stations are designed for peak flows, so significant inflow and infiltration (I&I) can impact available capacity. If additional capacity

is needed, efforts should be made to reduce I&I. An I&I study should be undertaken prior to reducing the amount of inflow and infiltration assumed in capacity calculations.

- When calculating committed capacity, the calculation should include vacant lots and/or units in registered plans of subdivision, lots in draft approved plans, lots/units in registered Plans of Subdivision/Condominium, and vacant lots created by consent.
- For water systems, if the system cannot meet maximum day demands, or Drinking Water Quality Standards or health parameters, future development may be limited.
- It is recommended that municipalities continuously monitor and review committed and uncommitted capacity on an annual basis.

Figure 4.1 Information Needs for Capacity Calculations



4.2 Allocating Capacity

Water and wastewater capacity are limited resources. Municipalities should develop a framework or policy with respect to the allocation of capacity in water supply and/or wastewater treatment facilities for potential development. These polices are often developed by municipal staff, with input from stakeholders and then approved through passage of by-law.

Development of an allocation policy can support future infrastructure planning as it provides a mechanism for prioritizing areas for development (e.g. based on what infrastructure is in place and what is planned), or a process for establishing a queue where capacity is limited. An allocation policy should outline a transparent process for how and when capacity is allocated and the conditions and timelines that must be met. Allocation policies often require developers to submit a separate application for capacity in conjunction with their development proposal.

Many allocation policies currently in place are based on a 'use it or lose it' approach, where if a development does not proceed within the agreed upon timelines, their capacity allocation is revoked and reallocated. Development of a policy should consider if extensions will be allowed and what the process for an extension request is. The policy should also outline the conditions when capacity will be revoked or reallocated if the developer does not meet the specified timelines for proceeding with construction.

Municipalities with Allocation Policies:

Southgate
Brantford
Vaughan
North Wellington
North Grenville

Most policies currently in place do not guarantee capacity for the entirety of multi-phase developments that may take place over many years. For developments planned over long time frames, developers should be aware that as part of the draft plan approval process for multi-phase projects, capacity may be allocated individually for phases and capacity for an initial phase is not a guarantee of the provision of capacity for additional phases. For any multi-phase project, it is recommended that developers be required to submit individual allocation applications for each phase.

There are a number of best practices that should be considered or included when establishing a policy directing the allocation of water and wastewater capacity. The goal of any allocation policy should be to establish a process for the allocating capacity in a sustainable and logical manner. When developing a capacity allocation policy, the following should be considered:

Who the policies apply to:

- Consider what types of development should require a capacity allocation (or be required to apply for a capacity allocation). If capacity is very limited it may be prudent to require a capacity allocation for all types of development and building applications.
- Generally, most municipalities have allocation policies that apply to Plans of Subdivision/Condominium, Site Plan applications, Zoning By-law Amendments (including removal of a holding provision), and consent applications. The policy should also specify that an allocation may be revisited if an application is revised.
- Intensification proposals for existing properties should be evaluated for capacity needs in a manner similar to a new Plan of Subdivision.
- Some municipalities, if their capacity calculations include an allowance for infill, exempt development applications that are less than a set number of units (e.g. 2-5 ERUs).

- If existing lots of record are identified within reserve capacity calculations as committed capacity, it may be appropriate to exempt these lots from requiring a capacity allocation.
- For pre-existing development proposals, most allocation policies include a grace period (often 1-3 years) for development to proceed. If the development does not proceed before the end of the grace period, the developer must reapply for a capacity allocation.

How capacity will be allocated:

- Capacity should be allocated on a first-come, first-serve basis where there is sufficient capacity. Large multi-phase developments that may take place over many years (e.g. 10+ years) should not be granted capacity for the entirety of the project at the time of approval. Only the phases that will proceed immediately (within 1-3 years) should be granted capacity.
- Many municipalities allocate capacity through a resolution of Council. Where Council approves capacity allocations, public works, planning and administration staff work together to assess the capacity request and prepare a report for Council.
- Developers should be required to submit a separate allocation application in conjunction with development applications. For multi-phase developments, an application should be required for each phase.
- Capacity may be conditionally allocated or reserved during the draft approval process for Plans of Subdivision. Final allocation is often confirmed upon registration of Plans.
- Where capacity is limited, some municipalities limit the amount of capacity allocated per year, either to a percentage of the uncommitted capacity (e.g. 25%) or a set number of ERUs. This can provide municipalities with some measure of control around the timelines for infrastructure expansions. Municipalities should consider if such an approach would be appropriate for their allocation policy.
- Establish an expiry period for allocations if not utilized, such that unused capacity is revoked or reallocated. Typically for Plans of Subdivision/Condominium if the Plan is not registered and executed within 1 to 3 years, the capacity is revoked. For site plans, consents and zoning amendments, if the plan is not registered/does not proceed within 1 to 5 years, the allocation is revoked.
- Establish a process to allow for renewal of a capacity allocation. Often capacity may be renewed for up to 1 year. Generally, the process involves a written request submitted to the municipality within a set time prior to the expiry of the allocation.
- Where development is proposed over long term phases, municipalities may wish to consider policies allowing capacity to be retained if the developer pays the base water and/or wastewater monthly charges for the number of proposed units associated with the capacity allocation.
- For non-residential development proposals, allocation requirements (in ERUs) should be addressed on a case-by-case basis and not be based on zoning designations. This is because potential water and/or wastewater needs can vary significantly between similarly zoned uses.
- Identify when capacity is considered committed and establish this in the policy.
- Require written consent for the transfer of capacity allocations associated with property sales.
- It is recommended that any allocation policy disallow developers/property owners transferring a capacity allocation from one property to another.

Associated with the development of a policy for allocating capacity, municipalities should consider establishing criteria for prioritizing allocations. Establishing criteria provides Council, staff and developers with clear direction on how allocation applications will be evaluated and prioritized when capacity is limited or there are competing applications. Such a policy can also be used to establish a queue if additional capacity is needed. Municipalities may also wish to establish a ranking or rating system for instances when multiple applications are received, and capacity is limited.

In municipalities with capacity allocations policies and associated prioritization criteria, these policies are often developed by staff and adopted through a motion of Council. The policies are public and are often included with development-related applications or resources.

Outside of evaluating and ranking capacity allocations, a prioritization framework can support the efficient use of existing infrastructure. Leapfrogging, or allowing development to occur beyond the current serviced area and leaving vacant lands in between, should be discouraged through any allocation prioritization policy.

If a municipality wishes to establish a capacity allocation policy that includes criteria for allocating capacity, the following should be considered:

- Municipalities should establish, based on their own priorities and supported by planning policies what types of developments will be considered a higher priority for capacity allocations. In municipalities with allocation prioritization policies, priority is often given to applications for: affordable housing, public facilities, developments associated with employment lands, and applications for mixed uses with a residential portion.
- Development within existing settlement area boundaries should be prioritized over proposals outside of the urban area.
- If there are local planning policies (e.g. Official Plan, Secondary Plan, Community Improvement Plan) in place that identify specific growth areas, municipalities should consider including criteria that prioritize developments in those areas.
- Developments that do not require local infrastructure improvements may be given higher prioritization than those that require downstream infrastructure upgrades.

4.3 Monitoring Capacity and Allocations

Monitoring water and wastewater capacity and allocations makes it easier for municipalities to understand and answer questions around remaining capacity as well as forecast and plan for future expansions if required. Establishing a process for where and how this information is collected and stored is also beneficial from a municipal staffing succession or transition perspective. The need to update reserve capacity calculations will depend on the rate of development and capacity of the water and wastewater systems. Where the rate of development is low and there is sufficient capacity, calculations may be updated less frequently. Where capacity is limited and/or there are numerous developments, capacity calculations should be updated on an annual basis.

The most important component of monitoring capacity and allocations is maintaining and updating information related to existing customers, flows, and commitments. This information is then readily available to staff or consultants to use in capacity calculations. The following actions are recommended for monitoring capacity and allocations:

- Municipal staff should identify if annual capacity calculations are required based on the level of development and uncommitted treatment capacity.
- The compilation of information related capacity allocations should include input from public works, planning and administration staff.
- Data or information that should be tracked includes:
    - Number of existing customers or connections (including residential and non-residential).
    - Development commitments, either formally allocated capacity through an established process or policy (see Section 4.2) or informally allocated capacity during a Planning approval process or discussions with staff. Development commitments include:
        - Units in draft approved and approved Plans of Subdivisions and Plans of Condominium
        - Units associated with site plans
        - Number of lots/units associated with proposed and approved severances
        - The number of potential infill lots, or alternatively, an allowance for infill (e.g., 15% of the existing number of customers).
- Figure 4.2 is an example of a monitoring or tracking spreadsheet for development commitments. It is recommended that development commitments are reviewed and updated on a regular basis.

Figure 4.2 Example of Capacity Monitoring Spreadsheet

Development	Location	Status	Type of Unit	Number of Units	Unbuilt Units	Date of Allocation	Allocation Expiry Date
Sunny Meadows	Erbstowne	Approved	Single Family	80	80	19-Sep-19	19-Sep-22
Sunny Meadows	Erbstowne	Approved	Townhouse	25	25	19-Sep-19	19-Sep-22
Oak Hollow	Potterville	Draft	Single Family	50	25	10-Jun-17	10-Jun-20
Green Acres	Courtown	Proposed Severences	Single Family	5	5	16-May-18	16-May-21

4.4 Establishing Timelines Associated with Capacity Increases

When a water or wastewater system is approaching capacity, it is important to understand the timeframes associated with the lead-up work that must be completed prior to an expansion. The need for increased capacity may be the result of uptake of the capacity by development (or a low amount of uncommitted treatment or supply capacity) or nearing effluent quality criteria, as a result of plant performance and/or increased development. In municipalities with historically low levels of growth and relatively a lesser amount of uncommitted capacity, a single new development can drive the need for increased capacity. This may be the case in many smaller urban centres, which have operated at or near capacity for many years with little new growth. In many cases, growth has historically occurred at such a low or slow pace that it does not drive a need to prepare for or plan an expansion. From a financial standpoint, an expansion may be a significant expense that without associated development, would be difficult to justify and may become a financial burden.

In other municipalities, systems may approach capacity at a steady pace based on sustained levels of development. Where development occurs at a more regular pace, municipalities can better position themselves with respect to planning infrastructure expansions because continued growth is expected, and it may be easier to predict when the expansion will be needed.

Regardless of what is driving the need for increased capacity, there are general steps and requirements that must be met ahead of any expansions to treatment and supply infrastructure. Ideally, municipalities will be monitoring the uncommitted reserve capacity to put themselves in a position to proactively plan for expansions. There is no governing policy outlining when expansions should be planned and implemented (e.g. when 80% of capacity is committed). This is because there are some municipalities with little or slow growth where plants operate at or near capacity and the costs of an expansion cannot be justified from a municipal financing perspective. The timing of expansions is further complicated when considering that approvals and studies often have expiry dates, limiting how far in advance these can be obtained. Establishing a monitoring program from capacity and working with local developers can assist in forecasting when additional capacity may be required.

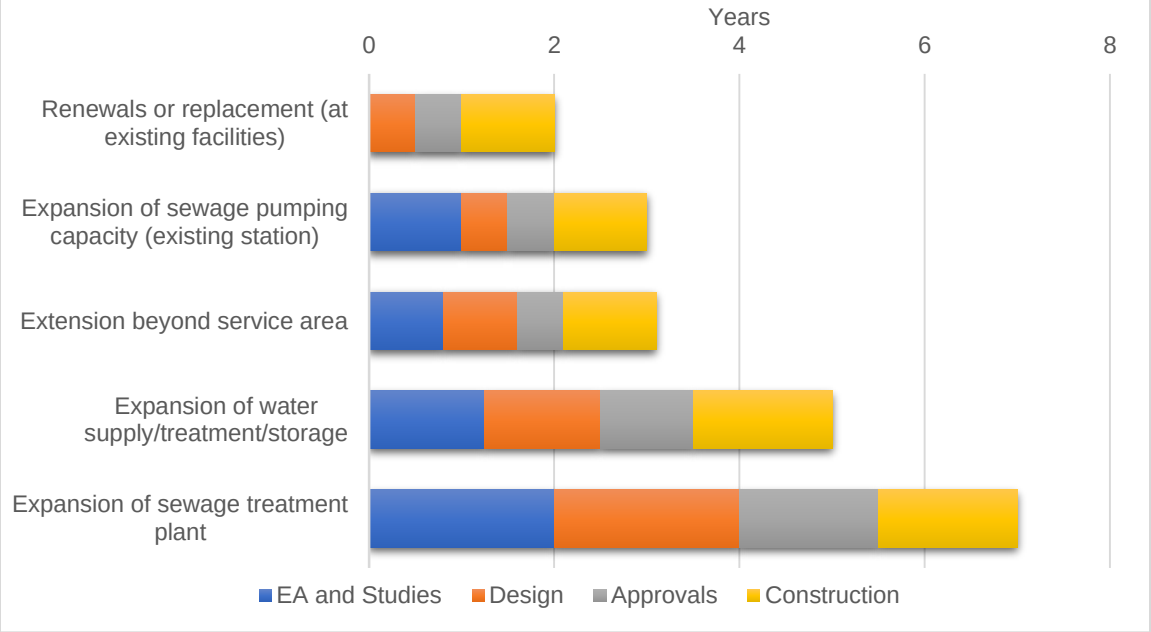
The steps and time requirements prior to a capacity expansion will vary based on what level of expansion is required and the existing facilities. These factors will also drive the need for Class EAs and other related studies (e.g. assimilative capacity). If capacity can be increased through upgrades and a rerating within an existing facility, it is expected that the pre-construction work and time need for design and approvals will be less than a large expansion requiring a Schedule C EA, assimilative capacity studies, extensive design needs and approvals.

There are a number of potential methods of increasing capacity, and generally the requirements in terms of time for studies, design, approvals and construction will vary depending on what solutions are being pursued. The following chart (Figure 4.3) outlines approximate timelines associated with increasing capacity through upgrades at existing facilities, expansion of existing pumping stations, extensions beyond existing service areas, major expansions to water treatment, supply and storage infrastructure, and expansions of sewage treatment plants. It should be noted that most upgrades or replacements of components within existing facilities are pre-approved under the Municipal Class Environmental Assessment process, but municipalities are encouraged to evaluate this on a project by project basis or seek professional advice if they are unsure.

Increasing capacity through an upgrade or replacement of an existing facility, where a Class EA is not required, should be planned to anticipate approximately 2 years of work (design, approvals and construction) before the infrastructure is online. Expansions of sewage pumping stations and extensions of services will likely require an EA (taking approximately 1 year), followed by another year for design and approvals and a third year for construction. If a new water storage facility or well is required, the process to implement those infrastructure components can take 5 years. The expansion of a sewage treatment plant, due to the need for studies, extensive design requirements, regulatory review and approvals may take 7 years prior to implementation. Environmental constraints, additional studies (e.g. Stage 3 or 4 archaeological assessments), appeals, local politics, and approval delays can significantly impact any of the above timelines.

Given this, municipalities should consider these timelines in light of uncommitted capacity and the rate of development to have sufficient time to complete the necessary studies, design, approval processes and construction ahead the need for additional capacity.

Figure 4.3 Estimated Timelines for Implementing Infrastructure Expansions



4.5 Pre-Servicing Agreements

When a development is proposed through the Site Plan or Plan of Subdivision/Condominium process, there may be instances when a developer requests permission to install on-site services (roads, watermains, sanitary sewers, stormwater infrastructure) prior to receiving final approval. If the municipality agrees to allow the on-site servicing to proceed, a Pre-Servicing Agreement should be entered into by both parties.

Ultimately, it is up to municipalities to decide if they will consider allowing developers to construct works under a pre-servicing agreement ahead of final approval of the development. There are risks associated with pre-servicing to both the developer and the municipality. From the development perspective, developers should understand and acknowledge that all pre-servicing work is done at their peril and municipalities may not assume responsibility for work that is done as part of the pre-servicing. Additionally, most pre-servicing agreements require the developer to be subject to requests for changes based on municipal review and any changes will be solely at the developer's expense. Developers should also be aware that pre-servicing does not guarantee final approval and there may be significant financial ramifications as a result, if final approval is not achieved.

Municipalities face risk associated with pre-servicing through the potential for litigation and claims if a developer perceives that the municipality has delayed or hindered final approval. The potential for a developer to default during the pre-servicing construction or prior to final approval is also a risk to municipalities. For these reasons, many municipalities do not allow pre-servicing agreements.

Should a municipality consider entering into pre-servicing agreements, the following best practices should be considered:

- Municipalities should develop a pre-servicing request form that outlines:
    - What documentation is required (e.g. legal survey, engineering drawings, technical reports, cost estimate, etc.),
    - Property information,
    - Ownership information,
    - Applicant information (if not property owner),
    - Current and proposed land uses,
    - Servicing details, and
    - Declaration of owner or authorized agent.
- Where municipalities have not previously entered into a pre-servicing agreement, they should consult a professional to assist in development of the agreement.
- Pre-servicing agreements should explicitly state that developers acknowledge that pre-servicing work is done at their peril and the municipality assumes no responsibility for any work that is done.
- Pre-servicing agreements generally should not permit any connections be made to municipal systems as part of the pre-servicing work.
- Developers should be required to provide a letter of indemnification to the municipality identifying any outstanding items from the engineering submission and stating the developer is proceeding at their sole risk on that basis.
- Within the pre-servicing agreements, municipalities should require the owner to supply proof of liability insurance in the amount of at least $5,000,000 with the municipality names as co-insured.
- Pre-servicing agreements should only be considered if the developer has:
    - Nearly fully completed detail design and any incomplete items are not relevant to servicing (e.g. sign wording, open space design items).
    - Has retained a consultant to oversee pre-servicing works.
    - Environmental Compliance Approvals have been issued.
    - Any other approvals (e.g. conservation authority permits) have been obtained.
- Municipalities should also require sufficient securities, should the developer cease work. Some municipalities require the full cost of services in securities, others a percentage of the full costs. Municipalities that require lesser amounts in securities should recognize the potential financial risks if the securities are required to complete or repair the work.
- The amount required in securities should be applied consistently throughout the municipality and across developments.

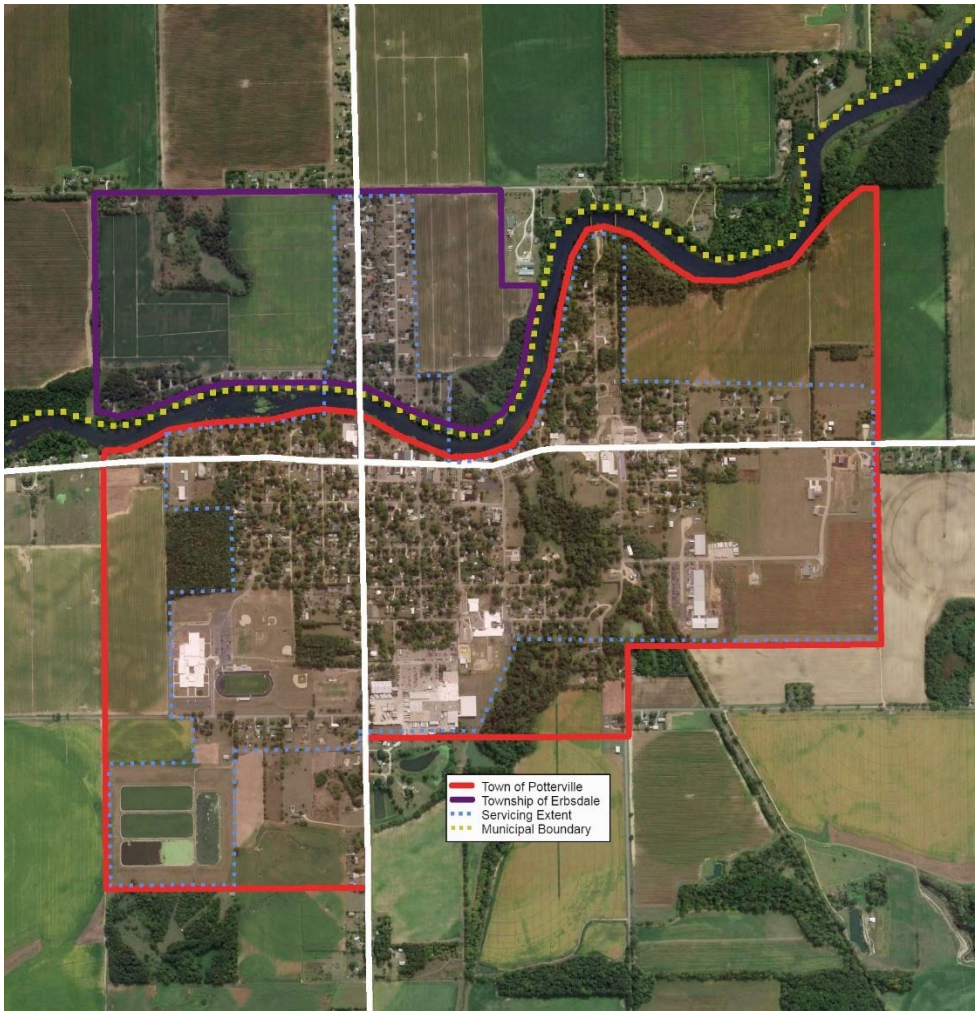
4.6 Cross Boundary Servicing

It is not uncommon that development proposals occur near a municipal boundary where services may be available from the neighbouring municipality. Municipalities are encouraged to consider policies and potential agreements with their neighbours with respect to cross border servicing when it comes to planning for infrastructure needs. Cross boundary servicing agreements for hard infrastructure or joint funding agreements for soft services (such as recreation facilities) can result in cost reductions and improve the ability of municipalities to sustain and enhance local services. Cross boundary servicing agreements may also result in economic benefits for both municipalities when servicing supports non-residential growth. For

example, if servicing is extended to support a commercial or industrial development in one municipality, the economic spinoff is likely to also benefit the municipality providing services through residential growth.

An example of cross boundary servicing is shown below in Figure 4.4. In this example, there is a small development area within the Township of Erbsdale that is serviced by the Town of Potterville. In this example, the Township of Erbsdale benefits from the provision of water and wastewater services, which allows development within a designated growth area. The property owners in the serviced area of Erbsdale contribute to operating, maintenance and capital costs of the Potterville services. The cross boundary agreement benefits Potterville in that they are fairly paid for the services provided. Potterville as a whole also benefits from the provision of services to the other municipality, as the property owners in Erbsdale will use and support commercial, institutional and recreational services in Potterville. In the future, should Erbsdale wish to designate additional lands for development, it would be in the interest of both communities to discuss and come to an agreement on servicing, potentially including, if needed, capital contributions towards an expansion of the water treatment or wastewater treatment system.

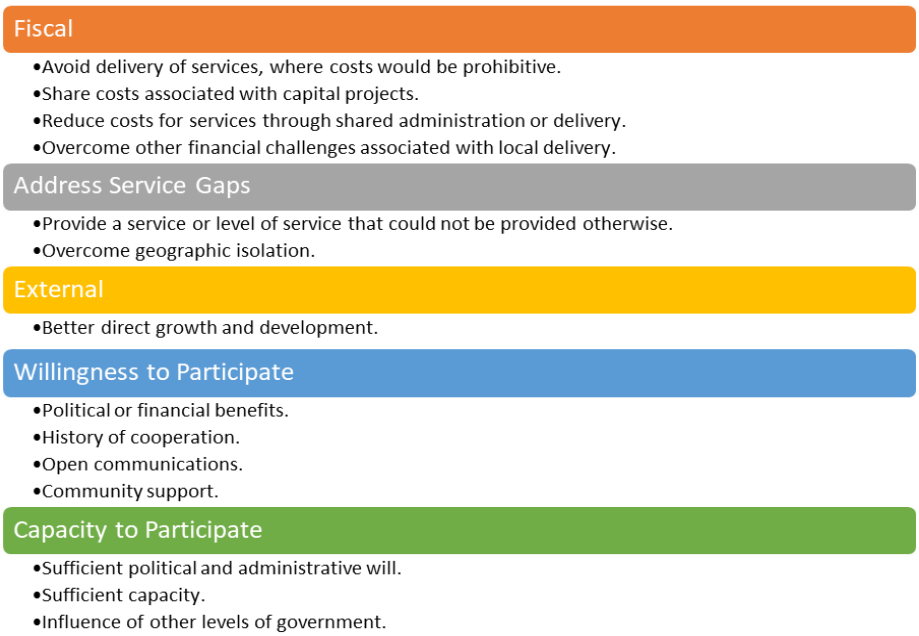
Figure 4.4 Example of Cross Boundary Servicing Between Two Municipalities



Agreements for cost sharing or paying for services provided by another municipality are utilized because other financing mechanisms (such as development charges) are generally not suited for funding shared services. While development charges can be collected for services provided outside a municipality, development charges can only be collected for growth-related capital projects and not operational or maintenance costs. Development charges are also limited in their use for funding shared services as they are only collected from new growth as it occurs, and not the existing population. The Development Charges Act does not speak to how municipalities should transfer monies collected for capital growth projects in another municipality, but typically an agreement would need to be in place for the transfer of funds which negates any efficiencies in collecting through the Development Charges Act.

Generally, there are five factors that motivate inter-local cooperation through shared services or agreements (see Figure 4.5).

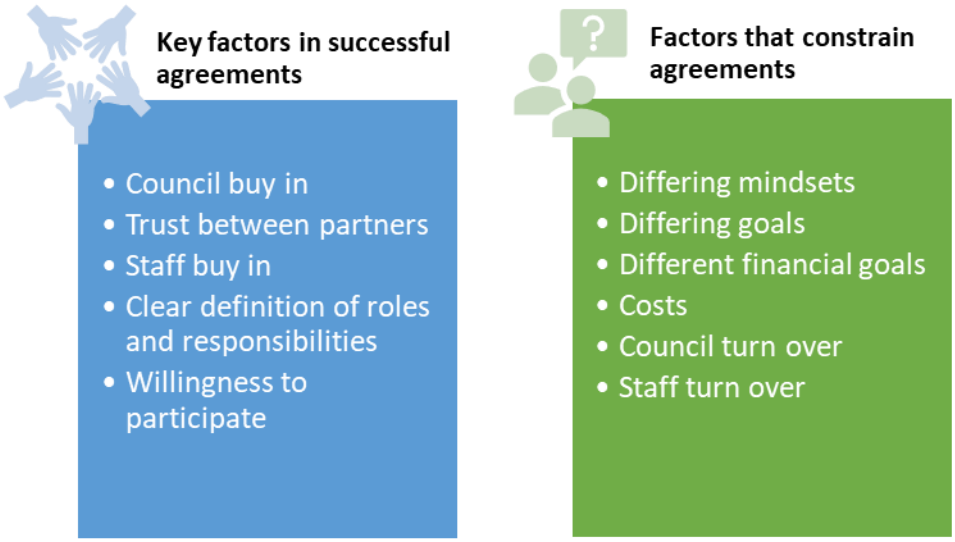
Figure 4.5 Factors that Motivate Inter-Municipal Partnerships



Municipalities should strive to identify potential servicing needs from neighbouring municipalities to proactively start discussion regarding cross boundary servicing. It is important to understand that there may be circumstances where municipalities will be unable or unwilling to extend servicing outside of their boundaries. This may be the result of a perceived lack of benefit or a lack of financial or servicing capacity.

Shared servicing agreements, regardless of the type of service being provided, generally must satisfy a common interest, provide mutual benefits, and be cost-effective to support an effective and long-lived partnership. There are a number of key factors that can support development of a partnership as well as those that may work against it. These factors are outlined in Figure 4.6.

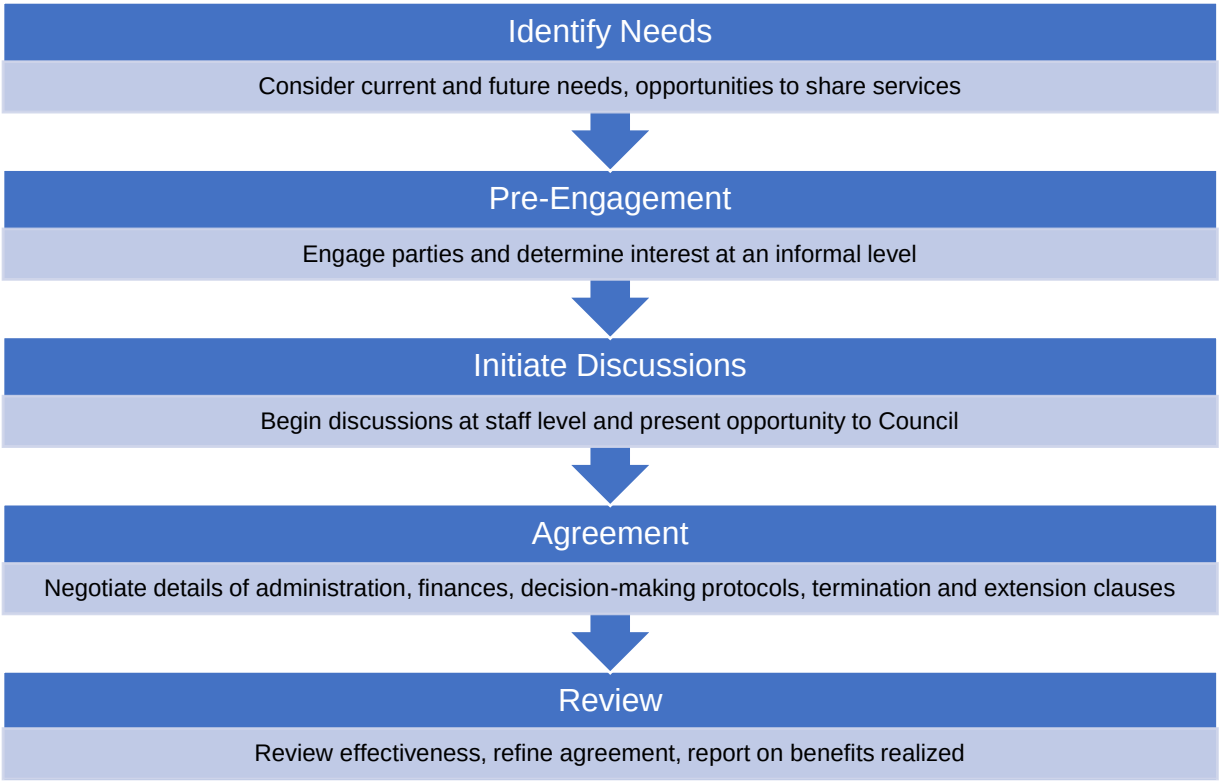
Figure 4.6 Factors that Influence the Success of Agreements



Where a neighbouring municipality is potentially receptive to providing services, it is important to establish an agreement to ensure services can be provided in an effective and efficient manner for both parties. Generally, the type of agreement (formal or adaptive) will depend on the type of services needed or to be shared. Formal agreements, such as a servicing agreement or other mechanism like a Joint Municipal Servicing Board, are typically utilized for large budget services such as water and wastewater services or funding of large recreation facilities. These types of agreements require that processes, responsibilities, authorities, outcomes and financial matters are clearly defined from the start. They often have fixed expiration dates and set out specific requirements for termination. The benefit of this type of agreement is that it provides stability and clearly outlines financial and administrative requirements for all parties involved.

Adaptive agreements are typically broad in nature and allow flexibility to respond to changing circumstances. An example of an adaptive approach may be a shared set of guidelines for coordinating local efforts. Typically, this approach is taken for services that are already in place such as mutual aid. Often adaptive agreements do not include termination clauses or expiration date. These types of agreements have been used to provide staff training services, library, and cultural services more efficiently.

When a municipality identifies a potential need for shared services, there are a number of general steps that should be followed:



When first approaching a request for shared services or a cross boundary agreement, it is important that both parties understand the current cost of services, forecast future needs and determine if there is sufficient capacity to support those needs. Early in the process, it is important to provide as much information as possible with respect to costs and service levels. Identifying the benefits, required resources and needs early will also help to bring people on board. During the initial discussions with staff, the goal should be to develop a clear understanding of needs, common ground, service aspirations and priorities to later guide the framework of the agreement. During the initial discussion with Council, it is important that staff highlight the economic, social and political advantages of the cross boundary agreement or shared service agreement.

When it comes to developing the framework for cost-sharing, it is important that all the costs are identified and discussed. These costs may include: operating costs, maintenance, capital costs, reserve contributions, liabilities (existing debt), insurance and administration needs. Generally, it is advised that operating and capital costs are not combined but remain as separate costs. How costs are allocated will vary depending on the service and any non-monetary contributions from the parties. Regardless of how costs are allocated, the approach should promote transparency, equity for services received, and a relatively simple method to administer. The most common approaches to cost sharing are noted in Table 4.1.

Table 4.1 Cost Sharing Approaches for Cross Boundary Agreements

Approach	Used for	Notes
Usage	Sewage, water, landfill services	Rates need to incorporate maintenance and capital reserves or have use flat fee for capital and maintenance reserves
Population	Police services, Health care, library services, ambulance	
Weighted Assessment	Fire services, recreation, ambulance, recreation services	Similar to the usage approach, consideration should be given to how funds for maintenance and capital reserves are collected from both parties.
Flat Fees	Recreation services, staff training	Contribution cap may be advisable if there is a significant difference in population

When developing the framework for cost sharing, especially with respect to water and wastewater services, it should be recognized that there will be expectations for contributions towards maintenance and reserves for larger system components (trunks, treatment facilities), as these facilities are associated with the provision of the service. Historically some municipalities have charged a premium rate (e.g. 125% or 150% of the costs within vendor municipality) for operating costs for services outside their borders. This typically reflects a desire to either limit how much service is provided (i.e. discourage extension of services), or as a way of recognizing that funds are contributed to the service in the vendor municipality from overall tax revenue. Premium rates may also be considered to pay towards the historic capital costs for treatment, distribution or collection systems. If a premium rate is negotiated and to be included in an agreement, it is important that the rationale behind the rate is clearly outlined and understood for transparency and to allow for public and Council support. Staff should be able to provide a simple answer for why a property owner will pay more on one side of the street compared to the other.

Examples of cross boundary servicing agreements related to major water and wastewater infrastructure include:

- City of Guelph and Guelph-Eramosa Township. The City of Guelph provides wastewater treatment service for the community of Rockwood in Guelph-Eramosa. When Rockwood required additional sewage treatment capacity, the two municipalities agreed upon a capital charge paid by Guelph-Eramosa for an expansion of the Guelph Wastewater Treatment Plant. The capital charge was equivalent to the development charges for purchasing capacity.
- Municipality of Kincardine and Township of Huron-Kinloss. The Municipality of Kincardine provides water and wastewater services to the Huronville area of Huron-Kinloss. Residents in Huron-Kinloss pay a premium for services – rates for Huronville residents are 125% of the Kincardine rates for water and wastewater services.

Best practices related to cross-boundary services include:

- Municipalities should identify potential servicing needs in conjunction with planning reviews (e.g. Official Plan reviews) and start discussions to present benefits and determine interest with adjacent municipalities.
- Recognize that cross boundary agreements may take significant time and staff resources to see through to signing.
- When developing shared service agreements, it is important that the objectives and approach are discussed in an open and transparent manner.
- Staff involved in the negotiation of an agreement should be capable of building trust and confidence in order to champion the process through to completion.
- Keep stakeholders informed throughout the process.
- Link the benefits of the agreement to municipal policies and strategic directions.
- From the initial phases of discussions through to signing of the agreement, it is important that the parties are forthcoming with expectations, information and realistic costs.
- It is important to manage public and political expectations about the timing (how long it may take to negotiate an agreement), costs, and benefits.
- Develop timelines for securing buy-in from staff and Councils
- Once the financial framework is established, each municipality should do an internal cost-benefit analysis.
- Ensure both parties are prepared to devote time to negotiate an agreement and to review it.
- Agreements for servicing should outline or specify:
    - What level of service will be provided,
    - Operation and potentially ownership of services,
    - The duration of the agreement,
    - Any contributions to be made to capital or operating costs and when these contributions are to be made,
    - The agreed upon cost allocation framework, including method of payment and actions upon non-payment,
    - Contingency plans for managing unforeseen or emergency situations, and
    - A dispute resolution mechanism, including who is involved and how decisions will be made.

4.7 Expansions to Major Infrastructure

The first step in identifying or planning for when major infrastructure facilities will need expansions is understanding the current capacities of these facilities. For the purposes of this guide, major infrastructure includes water supply, treatment, pumping and storage facilities and trunk watermain. From a wastewater perspective, major infrastructure includes treatment facilities, sewage pumping stations and trunk sewers. Understanding the capacity of these facilities and their condition is a critical component in developing potential timeframes or milestones for when an expansion is required.

It is also important to understand what development is planned and develop a forecast of future growth. The need for infrastructure expansions is determined by both capacity and demand. There is no simple formula for determine when major infrastructure facilities should be

expanded, it is up to municipalities to monitor capacity and demand and respond accordingly. There are tools however, that can assist municipalities in planning for infrastructure expansions by examining capacity and demands. A Master Plan under the Municipal Class Environmental Assessment process can examine infrastructure systems in terms of condition and capacity and forecast current and future needs.

Regardless of whether a Master Plan being utilized for planning, it should be recognized that there are number of steps that must occur prior to infrastructure expansions. Municipalities may wish to proactively plan expansions prior to capacity constraints that may limit development. However, there may be some instances, especially in smaller rural communities, where it is not economically feasible to undertake the steps to expand capacity without a commitment from the development requiring the service.

The steps and time required for expanding infrastructure will depend on what facilities and what type of expansion is proposed. Some expansions will take less time to implement, where large expansions (e.g. a new well or significant expansion to a sewage treatment plant) will take a number of years to complete. Given this, it is important to understand what type of expansion will be needed and the likely timing of the demand to ensure any required studies, design and approvals can be obtained in advance. The timelines associated with various major water and wastewater infrastructure expansions are summarized in Section 4.4 (see Figure 4.6).

Depending on the scale and scope of the expansion, a Municipal Class EA may be necessary. If the expansion involves upgrades accommodated within existing buildings (e.g. sewage pumping stations), the EA may be considered pre-approved. Generally, expansions of existing facilities that involves upgrades or repairs will take less time and pre-planning than expansions.

Generally, the more complex the facility requiring expansion, the longer it will take to plan, design, get approvals and construct. New water supply or major expansions to sewage treatment plants may take 5 to 10 years to implement from the time the need is identified. This is due to more complex environmental assessments that typically involve additional studies (assimilative capacity, source water modelling) and significant design and approval time. If a municipality is experiencing steady or an increasing trend in development, they should monitor capacity and forecast development to determine when and if a major expansion is needed so there is sufficient time to complete the necessary steps before a hold has to be placed on development.

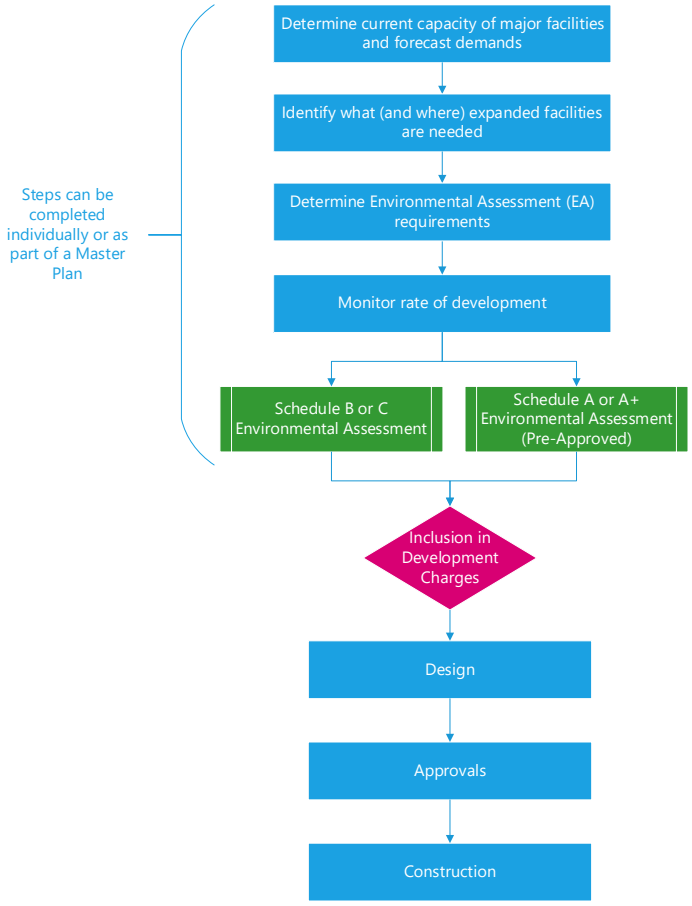
Municipalities can collect capital costs for works to be constructed that benefit future growth through development charges, if a bylaw is in place. If expansions to major infrastructure are required or forecasted, municipalities can add these projects into their development charges. Generally, these projects are added to development charges once the estimated costs and design population are established.

There may be significant costs associated with major infrastructure expansions. Consideration should be given to negotiating with developers for capital contributions during the approval process.

It should also be recognized there may be significant barriers or constraints that will impede expansions of infrastructure and therefore, potentially limit growth. These constraints include:

- Insufficient water supply,
- Insufficient receiver for additional effluent,
- Significant natural features (e.g. woodlands, wetlands) that may limit ability to expand existing infrastructure,
- Costs, especially if a higher level of treatment is required, and
- Lack of political support.

Figure 4.7 Steps for Expanding Major Infrastructure



The following are considered best practices for major infrastructure expansions:

- An effective method of planning water and sewage servicing strategies is through the preparation of multi-year servicing plans or Master Plans. Master Plans are a long-range planning tool that can be utilized regardless of the pace of development.
    - These plans can be done in support of revisions or in conjunction with an Official Plan Review for growth area studies (e.g. Secondary Plans).
- If a Master Plan approach is not utilized, municipalities should determine and monitor the capacity of major infrastructure components in relation to growth forecasts to identify potential constraints for future development
- Utilize development charges as a means of collecting for growth-related needs.

4.8 Road and Intersection Improvements

For many development proposals, it is common that intersections and the approaching roads may require improvements with the addition of turning lanes and potentially traffic signals. While it is difficult for municipalities to predict the type of occupancy that may be considered for development areas, it is prudent to be aware of traffic volumes and the extent of existing traffic congestion. Should municipalities know of, or identify existing issues with a road section or intersection, they can proactively engage a traffic consultant to evaluate the impacts of future development. Where extensive growth is forecasted, a municipality can also undertake a Transportation Master Plan to identify current and future needs related to road infrastructure.

Figure 4.8 Example of recommendations from a Transportation Master Plan (Town of Innisfil Transportation Master Plan Update)

Generally, many larger municipalities have utilized Transportation Master Plans to identify road deficiencies and potential future road improvement needs, based on forecasted growth or where existing development areas are. Often these master plans use traffic demand modeling to identify where major improvements (such as widenings, roundabouts, traffic lights) may be required in the future, over the short, medium and long-term. Master Plans can also identify where lands may be required for road improvements or new roads. Depending on the level of investigation of the master plan, projects may be designed and implemented or may require a Class EA study. Transportation master plans can also incorporate pedestrian and active transportation needs, such as multi-use paths, paved shoulders, and pedestrian crossings based on current and future needs. Figure 4.8 is an example taken from the Town of Innisfil Transportation Master Plan Update, showing the recommended works and improvements to the transportation network as identified through the master plan process.

With many applications for development, a Traffic Impact Statement (TIS) should be provided. The County of Huron has developed a document, Transportation Impact Assessment and Access Management Guidelines – July 2019, to assist developers in determining whether traffic studies should be required on County roads. Generally, TIS are done during the development proposal stage, as trip generation is most accurately forecasted when the type of tenant is known. The MTO has similar guidelines and any development adjacent to a Provincial Highway will need to complete traffic studies to satisfy the Province of Ontario.

For municipal roads, municipalities should understand the types of development that generate considerable traffic and request a TIS to review adjacent infrastructure as warranted. Generally, municipalities may wish to request TIS and road counts in response to development proposals that are:

- Large scale commercial or industrial developments,
- Large residential development proposals,
- May impact local, existing traffic movements,
- May generate significant volumes of traffic (e.g. fast food retailers, big box retailers), and
- Where there is the potential for impacts to existing known problem areas.

If the TIS identifies the need for improvements (e.g. turning lanes, signals), the project is typically funded by the developer. The basis for this approach is that if the development were not to proceed, the improvements would not likely be necessary.

If the municipality has undertaken a study that has identified future road or intersection improvements needed as a result of projected growth, those projects may be collected for through development charges. Often in these instances, municipalities construct the infrastructure and then collect development charges as development occurs. If improvements are needed after development has occurred, development charges cannot be utilized as development charges are only collected from new development. Depending on the scope and scale of improvements needed, municipalities may wish to consider a local improvement rate charge.

The following are considered best practices for road and intersection improvements:

- Municipalities should require TIS for developments with the potential to generate increased traffic, impact local traffic movements or impact a known problem area.
- Municipalities can undertake traffic studies for known problem areas or potential growth areas to forecast potential future needs (e.g. roundabout, signals)

4.9 Road and Network Design

When it comes to new roads developed as part of growth often these roads are extensions of existing roads or connect to the existing road network. Municipalities should encourage road patterns that are continuous, avoid dead-end streets, and provide linkages with the existing road system when presented with development proposals. In many rural urban areas, development tends to occur at the edges of the settlement area, outside of where road allowances are established.

Establishing New Road Allowances

Generally, most new road allowances are established through the development processes, most commonly site plans or Plans of Subdivision. Municipalities do have the authority, under the Planning Act, to identify and protect strategic public and private lands from development for the purposes of infrastructure lands such as road allowances. When a municipality wants to establish the location of a new road allowance, generally this is achieved through a Class EA or Master Plan process. For example, if a municipality owns lands designated for an industrial or business park, often the locations of road allowances are established through the EA or Master Plan to service the lands. The road allowances are then incorporated into Official Plan and Zoning Bylaw mapping.

When development is proposed, a municipality can acquire land for allowances at no cost, free of encumbrances and encroachments as part of the development process. Typically, the conveyance of lands for road allowance is a condition of approval. Typically for site plans and

plans of subdivision or condominium, the developer will propose a road layout and the locations of road allowances are negotiated and decided upon as part of the development process.

Figure 4.9 Two Examples of Roads Planned Through a Plan of Subdivision

When establishing new road allowances, whether being led by the municipality or a private developer, the constraints posed by significant natural features should be recognized. There may be significant natural features such as woodlands, wetlands or hazard lands at the boundaries of urban areas or within urban areas. These features have significant value as well as protection from development through Provincial and local planning policies. Generally, it should be assumed that development within these areas and adjacent to them will be limited. Given this, road networks should not be planned to intersect these areas. Figure 4.9 shows an example of a proposed road network in a development where a portion of the property has a natural feature, in this example a significant woodland. Given the woodland is considered significant, it is unlikely the road network and development pattern shown on the left would be approved. The road pattern on the right shows an alternative road network that avoids intrusion into the significant woodland. Additionally, to promote efficient land use and increased servicing costs, roads should not be considered immediately adjacent to natural areas, such that future development will be limited to one side of the road.]

Opening Road Allowances

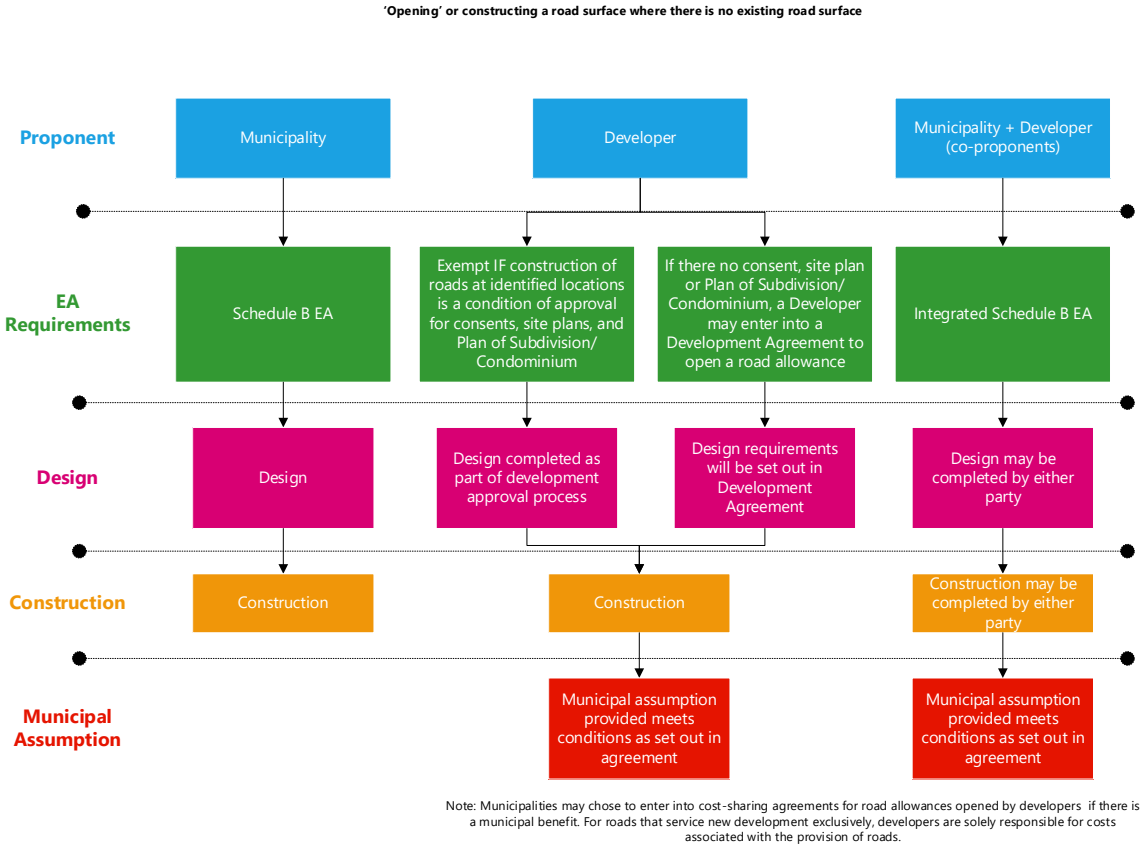
For the purposes of this document, an unopened road allowance is a road allowance where no road surface exists. When it comes to opening a road allowance, the process that must be followed to open the allowance is dependent on who is the proponent of the project. There are three potential proponents for municipal road projects:

- The municipality,
- A developer, and
- The municipality and a developer as co-proponents.

It is important to note that the process of severing lots that front onto an unopened road allowance, does not open a road nor are municipalities required to open unopened road allowances.

Figure 4.10 outlines the requirements for opening a road allowance for the three different types of proponents.

Figure 4.10 Process for Opening a New Road Allowance



If a municipality establishes and opens a road allowance, the associated costs may be recouped through development charges or rate bylaws. If a developer opens a road allowance and there is considerable benefit to other development properties, they may be potential to share costs with other property owners, or the municipality. The municipal share of road projects that benefit future growth may be recouped through development charges. Generally though, if a developer opens a road allowance for the sole benefit of their property, they are responsible for the costs of opening the road.

If a road extension is required to access a proposed development, the Municipality may wish to follow the Integrated EA approach (see Section 3.3). Generally, if the road extension benefits only the proposed development, it is expected the developer will be responsible for the costs associated with the extension. If there benefit to other parties or to the municipality, a cost sharing agreement may be negotiated.

When new roads are opened by developers, it is recommended that municipalities require that 0.3 m reserves are provided along flankages and along the frontages of undeveloped road portions. These reserves allow the municipality to control access to roadways and address

minor property issues. Municipalities should establish consistent policies regarding reserves that can be incorporated into agreements.

When considering roads and road network design, the following are considered best practices:

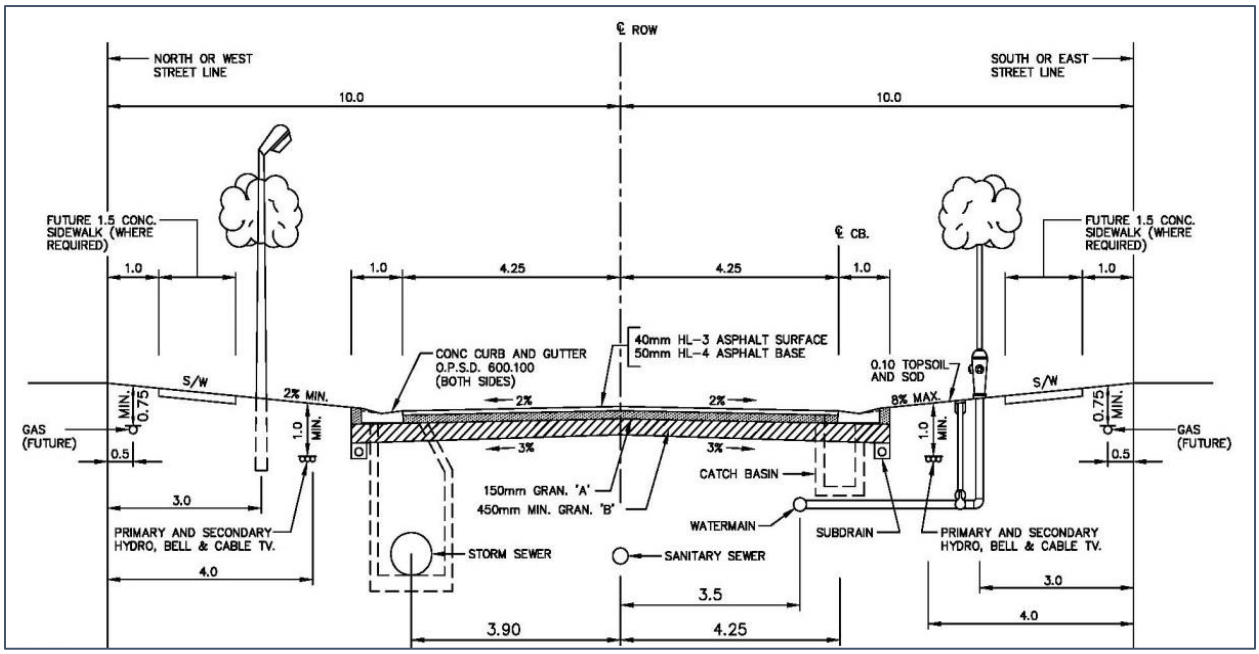
- Road allowances should be developed in a manner that allows for long-term transportation and infrastructure needs (i.e. are a sufficient width to accommodate future needs).
- Official Plans should include policies that provide protection for planned corridors from development.
- When developing or planning road networks, the efficiency of utilities should be considered e.g. opportunities to loop watermains and avoiding dead-ends.
- New roads should be designed to provide proper access to the development proposed.
- Roads should be continuous and connect to the existing road system in the local municipality.
- Where developments create new municipal roads, design will encourage connections and avoid dead end streets.
- It is recognized that phasing of installations may require temporary cul-de-sacs. Municipalities should work with developers to keep these to a minimum. Consideration should be given to the nature of those temporary cul-de-sacs should the balance of the phases not proceed in a timely manner.
- Municipalities should consider active transportation needs (e.g. paved shoulders) when reviewing new roads associated with development proposals.

4.10 Development Standards

Many municipalities have development or engineering standards that set out requirements or guidelines for design and construction of services across the municipality. Development standards ensure that services are provided in a consistent manner throughout the municipality. Having standards in place allow municipal staff to provide consistent standards for all developments and limit the ability of developers to approach Council with alternative servicing standards. By avoiding alternative servicing standards, municipalities may be able to avoid future costs associated with bringing those services up to the municipal standard. An example is if a developer is permitted to construct an urban road to only a semi-urban standard with ditches, the municipality would later be responsible for the costs to install curb and gutter and bringing the road up to the full urban standard.

An example of an urban road development standard is shown in Figure 4.11. The standard establishes the width of the road allowance, which is required to have sufficient space for all the utilities, infrastructure and required set-back distances.

Figure 4.11 Example of Urban Road Standard



At a minimum, development standards should address:

- Road dimensions associated with urban and rural cross-sections,
- Alignment and geometric standards for roads,
- Driveway standards,
- Stormwater management design and storm sewer design,
- Sanitary sewer and water main design and construction,
- Plan and drawings requirements,
- Streetlighting, and
- Landscaping requirements.

Development standards should also include guidelines for lot grading and for larger developments and site plan proposals, drainage control. Stormwater management guidelines may come from the local Conservation Authority.

It is important that standards are administered and applied uniformly across the municipality. A consistent application of the standards reduces the potential for conflicts, later issues and ensures consistency in the level of service provided. Enforcing these standards also reduces potential future costs to the municipality associated with bringing services up to the municipal standard.

4.11 Pedestrian and Cycling Infrastructure

Most municipalities have policies with respect to the provision of sidewalk for pedestrian use in new development. Generally, sidewalk should be provided on one side within residential areas and on both sides of the road in areas adjacent to institutional or commercial properties, or along arterial and collector roads. Connections to trail systems and beach access are vital in locations where available. Municipalities are encouraged to have policies that can be provided to developers to be considered as part of the development proposals.

Cycling lanes, which are not currently common in Huron County, may be considered on arterial, collector, or major residential streets. Municipalities may wish to create policies with respect to the provision of cycling lanes. Generally, cycling lanes should not be provided on local residential streets. It is recommended Municipalities refer to OTM Book 15 for Pedestrian Facility design and Book 18 for Cycling Facility design.

Best practices associated with pedestrian and cycling infrastructure include:

- Municipal staff should promote the creation of linkages to existing pedestrian and cycling infrastructure to developers.
- Sidewalks are typically required on one side of the street in residential areas and both sides in institutional and commercial areas. The municipality should include their requirements for sidewalks in their development standards.
- Sidewalks should have a uniform width, grade and finish
- Costs associated with construction of a sidewalk as part of a development are normally funded by developer.
- Where sidewalks are constructed by developers, ownership may be assumed to the municipality, subject to warranty and acceptance provisions under the terms of the subdivision or development agreement.
- Municipalities may wish to assume trails built as part of develop proposals. If a municipality is going to assume trails constructed by a developer, the design and construction requirements for trails should be specified in development standards or the development agreement. Trails should meet warranty and acceptance provisions as set out in the development agreement. Municipalities should consider liability risks when assuming trails if there are no municipal standards.

4.12 Stormwater Management

When considering growth outside the built limits of a community, municipalities should ensure that stormwater management (quantity and quality) be satisfactorily addressed to meet the following objectives:

- Reduce to acceptable levels, the potential risk of loss of life, health hazards, and property damage from flooding;
- Reduce to acceptable levels, the incidence of inconvenience caused by surface ponding and flooding;
- Ensure that any development or redevelopment minimizes the impact of change to the groundwater regime; increased pollution; increased erosion or increased sediment transport, especially during construction; and impact to surrounding lands and areas of existing development; and
- Maintain, where applicable, any natural stream channel geometry insofar as it is feasible while achieving the above objectives.

To satisfy the above and as summarized in the National Guide to Sustainable Municipal Infrastructure a comprehensive and integrated stormwater management planning process should be followed with the goal of accommodating land development and population growth while protecting property and natural resources. An integrated approach is the best practice and should be considered based on a hierarchical approach at all levels of planning including watershed, subwatershed, neighbourhood, and site.

The integrated approach should take a multi-disciplinary vision to planning stormwater infrastructure and requires interactions between land-use planning and engineering activities.

A brief summary of the levels of planning are summarized below:

- Watershed:
  The watershed plan is an umbrella document under which the subsequent plans will be prepared and should include vision, principles, and objectives. In many cases and depending on the community the need for an overall Watershed plan may not be practical. Typically, policies at the watershed level are predetermined by the local Conservation Authority who should be contacted in the early planning stages.

- Subwatershed:
  The subwatershed plan addresses stormwater management in a portion of the larger watershed. Similar to the Watershed plan, the local Conservation Authority may have policies already established to guide planning aspects of growth areas.

- Neighbourhood:
  This is the level of planning which provides for the area being considered with the optimal drainage system that conforms to the policies established for the larger subwatershed and watershed areas. It is likely that the planning under this level will include the development of more detailed stormwater management measures including a treatment train approach.

- Site:
  This involves planning for the detailed design at the site servicing plan stage and would normally be incorporated into site grading and erosion control plans.

For design guidelines associated with the actual stormwater measures the latest version of the County of Huron “Site Plan Development Technical Servicing Guide” should be referenced.

From an infrastructure perspective, there are four approaches to stormwater design:

- Lot level controls – are site specific controls that relate to either stormwater storage or infiltration. Common storage approaches are roof top, parking lot, pipe or rear yard storage. This type of stormwater management is common for commercial and industrial developments. Infiltration controls on a lot level include grading to allow ponding, soakaway pits and grassed swales.
- End of pipe controls – include stormwater ponds, wetlands, infiltration basins and oil and grit separators. These types of controls may be used individual or as part of a larger system to provide both quality and quantity control.
- Conventional stormwater management facilities – is the standard method of stormwater control and includes conveyance of stormwater (through ditches or pipes) up to the 5-year storm and a stormwater pond to accommodate the 100-year storm.
- Low Impact Development (LID) – encourages infiltration at the source to reduce runoff. Many LID measures are implemented at the lot level and include rain gardens, green roofs, pervious pavement and bioswales.

Lot-level controls and LID are typically used on a site basis, whereas end of pipe controls and conventional facilities may be used to provide stormwater management for a larger area. When

new development is proposed, the developer is responsible for addressing stormwater management (typically through a stormwater management report). Some municipalities have undertaken regional stormwater approaches, which usually involve the creation of a large stormwater management pond. A Class EA or stormwater Master Plan must be undertaken prior to construction of a regional stormwater facility. The advantages of regional and individual site approaches are summarized in Table 4.2.

Table 4.2 Benefits and Constraints Associated with Regional and Individual Approaches to Stormwater Management

REGIONAL APPROACH	INDIVIDUAL APPROACH
+ supportive of future development + municipality ensures maintenance and operation + potentially reduces costs for developers + if associated with parkland, it can be an amenity area. + costs may be recovered through Development Charges	+ address site specific conditions + municipality not responsible for costs associated with development of private property + allows for implementation of LID facilities + development not limited by capacity of regional facility
- inefficient if development is not localized in the same general area - can have significant costs associated with the construction of regional facilities - municipalities must carry the costs of the facilities until development occurs	- capital costs are borne solely by developer - may have many individual stormwater facilities within an area - reduced development area due to space requirements of on-site stormwater facilities - municipality often becomes responsible for maintenance costs

Generally, few smaller municipalities undertake the regional approach to residential stormwater management. The slow nature of growth and lack of a specific defined area where growth occurs limit the ability to use a regional approach. From a financial perspective, the cost of completing the study, designing and constructing a regional stormwater facility often is not a cost-efficient use of tax dollars. Regional approaches have been used successful for the servicing of business park or industrial lands, where the municipality has acted as the developer, installed services and then sells serviced lots.

Modern stormwater facilities require significant capital investment and ongoing operations and maintenance efforts. Facilities need to be viewed on a lifecycle basis where funding for preventative and emergency events need to be available. Where facilities are not funded by the development community funding mechanisms could be federal/provincial infrastructure funding, municipal tax revenue, development cost charges, or a stormwater utility charge. It should be noted that development charges can only be collected towards the capital costs associated with the provision of stormwater facilities, not their maintenance or operation. If a developer constructs a stormwater pond, often the developer pays for the design and construction of the pond and the municipality is then responsible for long term maintenance and operation.

The type and frequency of maintenance activities will depend on the type of facility. For lot-level controls, the property owner is responsible for the costs associated with maintenance. For stormwater ponds and LIDS often the municipality funds maintenance. Historically, municipalities have not required developers to pay for later maintenance of stormwater facilities, this is typically because stormwater ponds do not require frequent significant maintenance. Generally, ponds may require sediment removal 15 to 20 years post construction. Larger centres, which typically have a more significant number of ponds and stormwater facilities to maintain have implemented stormwater fees similar to water or wastewater charges. Increasingly, smaller municipalities are also considering this method of funding maintenance of stormwater infrastructure. This approach collects monies from stormwater users within the urban area to fund the ongoing maintenance associated with stormwater services. Municipalities that have implemented stormwater fees include: Middlesex Centre, Ottawa, Aurora, Guelph, Kitchener, London, Markham, Richmond Hill, St. Thomas, Newmarket and Waterloo.

5.0 Funding Strategies

5.1 Development Charges

Municipalities can collect development charges against new residential and non-residential development to pay for capital costs associated with infrastructure and services put in place to service growth. The types of services and infrastructure that can be collected through development charges are set out in the Development Charges Act and its associated regulation. Generally, development charges can be collected for capital costs for new and expanded water, wastewater, stormwater, and transportation infrastructure, in addition to other municipal services such as fire protection, and police services. Through development charges, municipalities can collect for growth-related projects, including studies, that are planned or have been built. The intent of development charges is that 'growth pays for growth'. When a municipality builds new or expanded infrastructure, often the costs are paid upfront by the municipality and then development charges are collected as growth occurs.

Development charges can only be enacted following completion of a Development Charges Background Study, a public process and passage of a bylaw. The Background Study outlines the projects to be funded through development charges and demonstrates the need for expanded and new services and infrastructure. Development Charge bylaws expire after 5 years, and a new Background Study and by-law must be passed. This provides the opportunity to review projects, remove projects that have been completed and paid for, as well as add new projects that benefit growth.

It should be noted that development charges are only applicable against capital costs for infrastructure and services that benefit future growth. They cannot be collected from existing development or for operational and maintenance costs. If a developer undertakes construction of infrastructure or services identified in the development charges background report, the work completed may be credited against development charges. Municipalities and developers can also enter into front-ending agreements, under a development charges by-law, when works are completed or shared with a private developer. Development charges are typically collected when a building permit is issued; however, municipalities can require payment of development charges for hard services when a subdivision agreement or consent agreement is entered into.

Municipalities should consider enacting a development charges by-law when it is expected that they will construct infrastructure or put in place services that benefit future growth. The following are best practices related to development charges:

- Identify projects that could be funded through development charges and make clear the intention to collect for these projects through motions of Council, or statements within studies or capital work plans.
- Consider projects identified in Master Plans and if they benefit future growth and therefore are eligible for inclusion in development charges.
- Municipal staff should be aware of the financial implications of development charges, specifically the long-term carrying costs associated with infrastructure works.
- Municipalities should collect development charges for water, wastewater, stormwater and road infrastructure projects when entering into a subdivision agreement, rather than when building permits are issued.

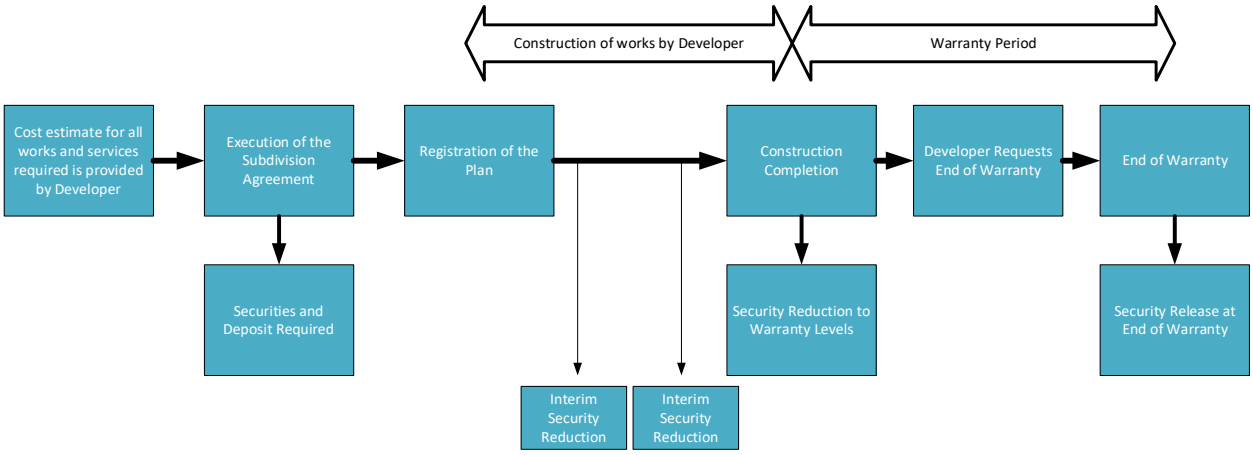
- Maintaining current and detailed records with respect to new residential and non-residential building permits and development supports the preparation of a background report, as well as the need for development charges.
- Private developers can consider entering into front-ending agreements to complete infrastructure works identified in developments or completing infrastructure and applying for credits against development charges.
- Where there are designated growth areas, it may be appropriate to implement an area-specific development charge by-law or service area.
- For municipalities that have development charges, when significant growth infrastructure projects for future growth are proposed, it may be appropriate to implement a new development charge bylaw prior to the expiry of the existing bylaw.

5.2 Securities

Municipalities commonly require developers to post securities for the value of works done in new or existing road allowances, as part of subdivision development. These securities ensure developers meet and complete their obligations as set out in development, site plan, or subdivision agreements. Upon meeting the requirements of the subdivision, site plan or development agreement, securities are released back to the developer.

For subdivisions, it is normal for municipalities to request financial securities for 100% of the value of all municipal works to be constructed. Municipal works includes all infrastructure to be constructed by the developer, such as roads, water, sanitary and stormwater infrastructure, street lighting, etc. It may also include the cost of servicing extensions or road works outside of the development, but required to connect to existing municipal services. The general process and timing of activities related to securities is shown in Figure 5.1.

Figure 5.1 Securities Process Flow Chart



The proportion of costs requested as securities for Site Plan Agreements can vary widely between municipalities. Some municipalities request up to 50% of the cost of the site works in securities and others do not collect securities. It is recommended that municipalities collect securities as part of site plan agreements that are 100% of the value of any works within municipal road allowances, plus as a minimum, sufficient funds to encourage developers to complete site works that are often overlooked, such as stormwater management facilities,

garbage facilities, bike racks, landscaping and lighting. A municipality would not use the collected securities to complete outstanding work but use the funds to minimize impacts to municipal facilities.

For Plans of Condominium, the Condominium Act requires municipalities to hold securities for 'common elements'. The standard is 125% of the construction value of those works.

Agreements with developers should clearly delineate the timing of the posting of securities, and much more importantly, the mechanism for the timely reduction of portions of the security as the work progresses. This will assist the developer in completing his obligations. For subdivisions, it is usual that a 10% maintenance security is held back until the expiry of the warranty period or until deficiencies are addressed.

With respect to securities, the following are considered best practices:

- Municipalities should develop a securities policy that clearly outlines the method of calculation used for different types of agreements. Such a policy should be consistently applied across the municipality for all developments requiring securities.
- Securities should be reduced at regular intervals, not just following issuance of certificates of acceptance.
- For larger developments, the developer may elect to phase servicing. Should this occur, municipalities should consider collecting additional security as future phases occur. Where these future phases are already registered as part of the Plan of Subdivision, placing an '-h' holding zone is common practice to assist in the deferral of securities.
- A security policy should identify what forms of security are acceptable. Generally, the only accepted forms of securities are cash and letters of credit.
    - Some larger municipalities accept land as security. This is not recommended practice.
    - Some larger municipalities have accepted performance bonds for security. These are not acceptable security. These items have not yet been proven in the case of a default, lack of court interpretation make enforcement uncertain, municipalities must monitor the financial status of the issuer of the bond, and letters of credit provide funds on demand unlike Subdivision Bonds which require a claim and supporting documentation.

5.3 Other Funding Strategies

5.3.1 Vacant Land Tax

Recent provincial changes have provided municipalities with greater flexibility with respect to vacant rebate and reduction programs for industrial and commercial properties. Municipalities now have the ability to set the rebate and reduction percentages to lower ranges than currently legislated, including eliminating tax reductions for vacant commercial and industrial properties. Prior to implementing these changes, municipalities must notify the Province of their intent and provide details on the proposed changes including a resolution of Council.

The reduction in vacant land rebates for commercial and industrial lands reduces the loss in tax revenue from a municipal perspective. Generally, reducing rebates for vacant lands will incentivize property owners to develop or fill vacancies. In light of this, a number of

municipalities have moved to eliminate the vacant land rebates and reduction programs either outright or through a phased approach.

With respect to residential vacancy taxes, in 2017 under Ontario's Fair Housing Plan, the Province moved to allow municipalities to introduce a vacant homes tax. This type of vacancy tax has been implemented in Vancouver but has yet to be introduced in a municipality in Ontario. In Vancouver, vacant residential units, with certain exceptions, are charged a tax of 1% of the assessed value. The intent of the tax is to discourage speculative holding of residential units and encourage property owners to either sell or rent out unoccupied dwellings. The cities of Toronto and Hamilton are currently investigating vacant home taxes.

Other funding strategy best practices

- Municipalities should undertake an evaluation of the impacts of changing vacant tax rebate and reduction programs, including the impacts on other tax classes (e.g. residential) prior to implementation.
- Municipalities should undertake consultation with local business groups prior to implementing changes.
- Continue to monitor the implementation of vacant home taxes in other municipalities, with respect to administrative approaches and challenges.

6.0 References

Ministry of Environment and Climate Change. (2008). *Design Guidelines for Drinking-Water Systems.*

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PMHubbard and Associates Limited, Hamilton Public Works. (2014). *A Guide to Coordinating Integrated Planning Processes.*

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APPENDIX A
Quick Reference of Best Practices

Incremental Growth

To minimize impacts associated with incremental growth, the following is recommended:

- ⇨ Municipalities should encourage pre-consultation with developers proposing development via consents. The pre-consultation should be considered mandatory.
- ⇨ If interior lands are unlikely to be developed in tertiary settlement areas (where there are no municipal water or wastewater services), the designation should be removed and the growth designation utilized elsewhere.
- ⇨ Municipalities should promote the use of Plans of Subdivision for development as a tool to achieve planning outcomes.
- ⇨ Multiple landowners may wish to work cooperatively in order to develop areas in a coordinated, cost-effective manner for all parties.
- ⇨ Municipalities should endeavour to avoid partial services within settlement areas.

Master Plans

When considering Master Plans, utilize the following best practices:

- Identify the scale and scope early. For multiple, large complex systems, it may be more efficient to consider separate Master Plans. For defined areas, it may be possible to consider multiple infrastructure services in one Master Plan (e.g. a Master Plan to service a business park).
- Consider if the Master Plan can be integrated with an Official Plan Review, Official Plan Amendment, or Secondary Plan. Integrating the investigations completed as part of the Master Plan can help inform land use planning decisions.
- Identify the need for Master Plans that will benefit future growth. Municipalities may be able to fund a portion of the costs to complete a Master Plan (or plans) through development charges.
- Identify the level of detail appropriate for the Master Plan. If a high-level, broad Master Plan approach is taken, future site-specific studies may be required. Identifying the level of investigation early will help ensure that the appropriate requirements under the Municipal Class EA process are met.
- Large and complex Master Plans, or Master Plans completed with a high level of detail will take a proportional amount of resources and time to undertake.
- When a Master Plan is completed, it is important to update it on a regular, or as-needed basis. Master Plan Update studies can be undertaken to help ensure the Master Plan is current and aligned with current land use planning and infrastructure needs.
- Incorporate Master Plan findings, recommendations and phasing plans into long-term planning documents and budget plans.
- Where private developers may benefit from the completion of a Master Plan, there may be an opportunity for cost-sharing. A Master Plan may include other studies (archaeology, natural heritage) that may benefit developers.

Integrated Class EAs

When considering an Integrated Approach, the following best practices should be considered:

- The Southwest Region Regional Office of the Ministry of Environment, Parks and Conservation must be consulted early when a proponent is considering utilizing the Integrated Approach.
- When considering implementing an Integrated Approach, the proponent is to consider:
    - Timing of the planning application and overall project schedule. If the timelines for the planning application and infrastructure environmental assessment cannot occur concurrently, it may not be appropriate to use the Integrated Approach.
    - Identifying the studies (e.g. archaeology, natural heritage) that will be required as part of the Class EA and planning processes can assist in determining timelines and cost sharing needs.
- Private developers to consider:
    - Consulting with the Municipality to determine if there are any Schedule C infrastructure requirements (e.g. road, water or wastewater) within the planning application area, or schedule B or C infrastructure projects outside the planning application area that are required to support the development.
    - Depending on the infrastructure required, being co-proponents with the Municipality within the Integrated Approach.
    - Consulting with the Municipality to ensure the proposed approach meets both the requirements of the Planning Act and the Environmental Assessment Act.
- Prior to undertaking an Integrated Approach, municipalities to consider:
    - Developing a strategy or protocol to identify situations when the Municipality will consider assuming the role of proponent and/or co-proponent with private developers. Instances when a municipality may consider being a proponent or co-proponent include:
        - When the Municipality will be ultimately responsible for the works constructed by a private developer;
        - When a project has the potential to impact adjacent municipal services; or
        - When a project will have mutual benefits to the Municipality and a private developer;
- Establish early in the Planning Application process if an integrated approach is appropriate. The Integrated Approach is most appropriate when planning and the infrastructure environmental assessment activities can be planned jointly and concurrently.
    - If one process started before the other, it may be more appropriate to consider a coordinated approach, which would follow separate processes.
- Determine the proponent(s) early in the process.
- If infrastructure studies have been recently undertaken (e.g. a Water or Wastewater Master Plan), it may not be cost-effective or efficient to utilize the Integrated Approach if the studies have already identified infrastructure needs and/or completed a sufficient level of investigation to implement identified infrastructure projects.
- Prior to starting an Integrated Approach, it is important to understand the timing and budget requirements. If the Approach includes a private developer and the Municipality

being co-proponents, both parties must understand the potential time required to complete the process and expected timelines. At this point, cost-sharing is to be determined, if applicable.
- When there are co-proponents, cooperation is key as both parties must share information in a timely fashion and provide input within agreed upon timelines.

Development Related Studies

The following are considered best practices for development related studies:

- Municipalities to consider broad, larger scale studies to provide baseline context and information for site-specific studies.
- If municipalities elect to undertake studies that will benefit future growth, those studies should be included in development charges.
- Some studies may be undertaken in conjunction with other studies (e.g. Master Plans or Official Plan Updates). The studies should be made available or shared with developers.
- Where regional studies have been completed, municipalities should consider if and how updates will be undertaken.
- Where developers will benefit from the completion of regional studies by municipalities, developers should consider financial contributions for the work completed.
- Developers must recognize there still may be requirements for site-specific studies.
- Developers may find efficiencies if studies are jointly undertaken for adjacent properties.
- When studies are done at a County or municipal level staff should consider adding mapping layers to existing GIS tools or alternatively, making the maps available for public review.

Calculating Water and Wastewater Capacity

When calculating water and wastewater capacity, the following best practices should be followed:

- Recognize that other factors outside of the rated capacity may also limit development potential, including pumping station capacity, collection and distribution infrastructure.
- Do not use flow data from a single year in a capacity calculation. Use flow data from the last 3 years to accommodate variations that may be the result of increased or decrease usage, and inflow and infiltration.
- Sewage treatment plants and pumping stations are designed for peak flows, so significant inflow and infiltration (I&I) can impact available capacity. If additional capacity is needed, efforts should be made to reduce I&I. An I&I study should be undertaken prior to reducing the amount of inflow and infiltration assumed in capacity calculations.
- When calculating committed capacity, the calculation should include vacant lots and/or units in registered plans of subdivision, lots in draft approved plans, lots/units in registered Plans of Subdivision/Condominium, and vacant lots created by consent.

- For water systems, if the system cannot meet maximum day demands, or Drinking Water Quality Standards or health parameters, future development may be limited.
- It is recommended that municipalities continuously monitor and review committed and uncommitted capacity on an annual basis.

Capacity Allocation Policies

If a municipality wishes to establish a capacity allocation policy that includes criteria for allocating capacity, the following should be considered:

- Municipalities should establish, based on their own priorities and supported by planning policies what types of developments will be considered a higher priority for capacity allocations. In municipalities with allocation prioritization policies, priority is often given to applications for: affordable housing, public facilities, developments associated with employment lands, and applications for mixed uses with a residential portion.
- Development within existing settlement area boundaries should be prioritized over proposals outside of the urban area.
- If there are local planning policies (e.g. Official Plan, Secondary Plan, Community Improvement Plan) in place that identify specific growth areas, municipalities should consider including criteria that prioritize developments in those areas.
- Developments that do not require local infrastructure improvements may be given higher prioritization than those that require downstream infrastructure upgrades.

Monitoring Capacity and Allocations

The following actions are recommended for monitoring capacity and allocations:

- Municipal staff should identify if annual capacity calculations are required based on the level of development and uncommitted treatment capacity.
- The compilation of information related capacity allocations should include input from public works, planning and administration staff.
- Data or information that should be tracked includes:
    - Number of existing customers or connections (including residential and non-residential).
    - Development commitments, either formally allocated capacity through an established process or policy (see Section 4.2) or informally allocated capacity during a Planning approval process or discussions with staff. Development commitments include:
        - Units in draft approved and approved Plans of Subdivisions and Plans of Condominium
        - Units associated with site plans
        - Number of lots/units associated with proposed and approved severances

- The number of potential infill lots, or alternatively, an allowance for infill (e.g., 15% of the existing number of customers).

Pre-Servicing Agreement

Note – it is generally recommended that pre-servicing agreements are avoided. Should a municipality consider entering into pre-servicing agreements, the following best practices should be considered:

- Municipalities should develop a pre-servicing request form that outlines:
  - What documentation is required (e.g. legal survey, engineering drawings, technical reports, cost estimate, etc.),
  - Property information,
  - Ownership information,
  - Applicant information (if not property owner),
  - Current and proposed land uses,
  - Servicing details, and
  - Declaration of owner or authorized agent.
- Where municipalities have not previously entered into a pre-servicing agreement, they should consult a professional to assist in development of the agreement.
- Pre-servicing agreements should explicitly state that developers acknowledge that pre-servicing work is done at their peril and the municipality assumes no responsibility for any work that is done.
- Pre-servicing agreements generally should not permit any connections be made to municipal systems as part of the pre-servicing work.
- Developers should be required to provide a letter of indemnification to the municipality identifying any outstanding items from the engineering submission and stating the developer is proceeding at their sole risk on that basis.
- Within the pre-servicing agreements, municipalities should require the owner to supply proof of liability insurance in the amount of at least $5,000,000 with the municipality names as co-insured.
- Pre-servicing agreements should only be considered if the developer has:
  - Nearly fully completed detail design and any incomplete items are not relevant to servicing (e.g. sign wording, open space design items).
  - Has retained a consultant to oversee pre-servicing works.
  - Environmental Compliance Approvals have been issued.
  - Any other approvals (e.g. conservation authority permits) have been obtained.
- Municipalities should also require sufficient securities, should the developer cease work. Some municipalities require the full cost of services in securities, others a percentage of the full costs. Municipalities that require lesser amounts in securities should recognize the potential financial risks if the securities are required to complete or repair the work.
- The amount required in securities should be applied consistently throughout the municipality and across developments.

Cross-Boundary Services

Best practices related to cross-boundary services include:

- Municipalities should identify potential servicing needs in conjunction with planning reviews (e.g. Official Plan reviews) and start discussions to present benefits and determine interest with adjacent municipalities.
- Recognize that cross boundary agreements may take significant time and staff resources to see through to signing.
- When developing shared service agreements, it is important that the objectives and approach are discussed in an open and transparent manner.
- Staff involved in the negotiation of an agreement should be capable of building trust and confidence in order to champion the process through to completion.
- Keep stakeholders informed throughout the process.
- Link the benefits of the agreement to municipal policies and strategic directions.
- From the initial phases of discussions through to signing of the agreement, it is important that the parties are forthcoming with expectations, information and realistic costs.
- It is important to manage public and political expectations about the timing (how long it may take to negotiate an agreement), costs, and benefits.
- Develop timelines for securing buy-in from staff and Councils
- Once the financial framework is established, each municipality should do an internal cost-benefit analysis.
- Ensure both parties are prepared to devote time to negotiate an agreement and to review it.
- Agreements for servicing should outline or specify:
    - What level of service will be provided,
    - Operation and potentially ownership of services,
    - The duration of the agreement,
    - Any contributions to be made to capital or operating costs and when these contributions are to be made,
    - The agreed upon cost allocation framework, including method of payment and actions upon non-payment,
    - Contingency plans for managing unforeseen or emergency situations, and
    - A dispute resolution mechanism, including who is involved and how decisions will be made.

Major Infrastructure Expansions

The following are considered best practices for major infrastructure expansions:

- An effective method of planning water and sewage servicing strategies is through the preparation of multi-year servicing plans or Master Plans. Master Plans are a long-range planning tool that can be utilized regardless of the pace of development.

    - These plans can be done in support of revisions or in conjunction with an Official Plan Review for growth area studies (e.g. Secondary Plans).
- If a Master Plan approach is not utilized, municipalities should determine and monitor the capacity of major infrastructure components in relation to growth forecasts to identify potential constraints for future development
- Utilize development charges as a means of collecting for growth-related needs.

Road and Intersection Improvements

The following are considered best practices for road and intersection improvements:

- Municipalities should require TIS for developments with the potential to generate increased traffic, impact local traffic movements or impact a known problem area.
- Municipalities can undertake traffic studies for known problem areas or potential growth areas to forecast potential future needs (e.g. roundabout, signals)

Roads and Network Design

When considering roads and road network design, the following are considered best practices:

- Road allowances should be developed in a manner that allows for long-term transportation and infrastructure needs (i.e. are a sufficient width to accommodate future needs).
- Official Plans should include policies that provide protection for planned corridors from development.
- When developing or planning road networks, the efficiency of utilities should be considered e.g. opportunities to loop watermains and avoiding dead-ends.
- New roads should be designed to provide proper access to the development proposed.
- Roads should be continuous and connect to the existing road system in the local municipality.
- Where developments create new municipal roads, design will encourage connections and avoid dead end streets.
- It is recognized that phasing of installations may require temporary cul-de-sacs. Municipalities should work with developers to keep these to a minimum. Consideration should be given to the nature of those temporary cul-de-sacs should the balance of the phases not proceed in a timely manner.
- Municipalities should consider active transportation needs (e.g. paved shoulders) when reviewing new roads associated with development proposals.

Pedestrian and Cycling Infrastructure

Best practices associated with pedestrian and cycling infrastructure include:

- Municipal staff should promote the creation of linkages to existing pedestrian and cycling infrastructure to developers.
- Sidewalks are typically required on one side of the street in residential areas and both sides in institutional and commercial areas. The municipality should include their requirements for sidewalks in their development standards.
- Sidewalks should have a uniform width, grade and finish
- Costs associated with construction of a sidewalk as part of a development are normally funded by developer.
- Where sidewalks are constructed by developers, ownership may be assumed to the municipality, subject to warranty and acceptance provisions under the terms of the subdivision or development agreement.
- Municipalities may wish to assume trails built as part of develop proposals. If a municipality is going to assume trails constructed by a developer, the design and construction requirements for trails should be specified in development standards or the development agreement. Trails should meet warranty and acceptance provisions as set out in the development agreement. Municipalities should consider liability risks when assuming trails if there are no municipal standards.

Development Charges

The following are best practices related to development charges:

- Identify projects that could be funded through development charges and make clear the intention to collect for these projects through motions of Council, or statements within studies or capital work plans.
- Consider projects identified in Master Plans and if they benefit future growth and therefore are eligible for inclusion in development charges.
- Municipal staff should be aware of the financial implications of development charges, specifically the long-term carrying costs associated with infrastructure works.
- Municipalities should collect development charges for water, wastewater, stormwater and road infrastructure projects when entering into a subdivision agreement, rather than when building permits are issued.
- Maintaining current and detailed records with respect to new residential and non-residential building permits and development supports the preparation of a background report, as well as the need for development charges.
- Private developers can consider entering into front-ending agreements to complete infrastructure works identified in developments or completing infrastructure and applying for credits against development charges.
- Where there are designated growth areas, it may be appropriate to implement an area-specific development charge by-law or service area.

- For municipalities that have development charges, when significant growth infrastructure projects for future growth are proposed, it may be appropriate to implement a new development charge bylaw prior to the expiry of the existing bylaw.

Securities

With respect to securities, the following are considered best practices:

- Municipalities should develop a securities policy that clearly outlines the method of calculation used for different types of agreements. Such a policy should be consistently applied across the municipality for all developments requiring securities.
- Securities should be reduced at regular intervals, not just following issuance of certificates of acceptance.
- For larger developments, the developer may elect to phase servicing. Should this occur, municipalities should consider collecting additional security as future phases occur. Where these future phases are already registered as part of the Plan of Subdivision, placing an '-h' holding zone is common practice to assist in the deferral of securities.
- A security policy should identify what forms of security are acceptable. Generally, the only accepted forms of securities are cash and letters of credit.
    - Some larger municipalities accept land as security. This is not recommended practice.
    - Some larger municipalities have accepted performance bonds for security. These are not acceptable security. These items have not yet been proven in the case of a default, lack of court interpretation make enforcement uncertain, municipalities must monitor the financial status of the issuer of the bond, and letters of credit provide funds on demand unlike Subdivision Bonds which require a claim and supporting documentation.

Other Funding Strategies

Other funding strategy best practices

- Municipalities should undertake an evaluation of the impacts of changing vacant tax rebate and reduction programs, including the impacts on other tax classes (e.g. residential) prior to implementation.
- Municipalities should undertake consultation with local business groups prior to implementing changes.
- Continue to monitor the implementation of vacant home taxes in other municipalities, with respect to administrative approaches and challenges.