Highway Access Management Guideline
Ministry of Transportation

Disponible en français

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Acknowledgement

The Ontario Ministry of Transportation has undertaken an extensive jurisdictional review of current Access Management initiatives from across North America. The work undertaken by the Transportation Research Board, Committee on Access Management, has been particularly helpful.
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1. Introduction to this Guideline

1.1 Who should read this guideline?

This guideline is intended for:

- **stakeholders**, such as **property owners**, developers and agencies
- municipalities
- the Ontario Ministry of Transportation (MTO) itself

**Stakeholders** should reference this guideline for their development objectives.

Municipalities should consider this guideline when updating Official Plans, developing Secondary Plans, and when reviewing land use applications such as Official Plan amendments, zoning bylaw amendments, site plan applications, consent applications, etc.

MTO will follow this guideline when reviewing land use development proposals, when issuing **Entrance permits** and **Building and Land Use permits**, and when planning and designing highways.

As you will see in section **2.6, Best practices for a win-win result…**, considering transportation at the beginning of the land use planning cycle is better for all of us!

You will also find a series of appendices at the end of this guideline. They provide a higher level of detail about access management that is important both to MTO staff and to **stakeholders** and municipalities.
1.2 Purpose of this guideline

MTO is promoting as a best practice that all municipalities and stakeholders involve MTO in the very early stages of land use planning. This will reduce potential future conflicts so that the objectives of both parties can be efficiently achieved. As you will see in section 2.6, Best practices for a win-win result..., there are advantages for getting MTO involved early.

By contrast, municipalities and stakeholders that do not involve MTO early have no option but to react at the last minute if conflicts with MTO access management standards arise. This can be very costly and time consuming for all involved and can even make the proposed development impossible. This is something we all want to avoid.

This guideline is a step toward making our goal a reality. It encourages municipalities and stakeholders to address highway access management early in their planning process when alternatives can be reasonably considered and implemented. You will learn more about this in the next chapter.

We encourage you to become familiar with this guideline prior to initiating land use development or applying for an MTO Entrance permit or Building and Land Use permit.

1.3 How was the guideline developed?

MTO has reviewed the experiences and best practices from transportation agencies, research boards and committees in Canada and the United States, and developed a set of policies, standards and requirements for access management specific to the Ontario highway network. MTO has also ensured that its access management standards are in keeping with its own standards, such as the Geometric Design Standards for Ontario Highways (GDSOH) manual.

In addition, MTO obtained input from municipalities, road associations and development industry groups from across Ontario. MTO has incorporated many of the thoughts and ideas we received into this guideline.

MTO will continue to examine innovative approaches in access management for future versions of this guideline. This will be done as part of an ongoing MTO program separate from project-specific plans.
Note:

Standards for the design of freeways and interchanges, highways and intersections and associated items such as interchange ramps, turning lanes, traffic signals, etc. can be found in MTO’s GDSOH manual. The GDSOH manual may be obtained:

- via MTO’s public website by way of the online MTO Research Library catalogue: http://www.mto.gov.on.ca/english/transrd/
- for purchase, via the ServiceOntario Publications website: https://www.publications.serviceontario.ca/pubont/servlet/ecom/

1.4 Conventions used in this guideline

1.4.1 Purple underling means you can jump to the underlined Glossary definition

Throughout the guideline, it has been necessary to use some technical terms and acronyms. To assist you, a glossary has been included for easy reference (see Chapter 11).

Whenever you see a purple underlined word or phrase and you are not sure what it means, you can click it to jump to the Glossary and look it up. If viewing on the internet, just click the Back button in your browser afterward to return to where you were. If viewing as a PDF document, just click the Previous View button afterward to return to where you were.

Example: Adequate XXX shall be provided for the access connection.

Clicking XXX takes you to the page in the Glossary on which that phrase is defined. You may need to scroll down to find the reference if it is not near the top of the page.
1.4.2 Blue underlining means you can jump to the underlined topic or website

Whenever you see a blue underlined topic, you can click it to jump to the topic in question or the associated website. If viewing on the internet, just click the Back button in your browser afterward to return to where you were. If viewing as a PDF document, just click the Previous View button afterward to return to where you were.

**Example:** See Table 1 for details.

Clicking Table 1 takes you to the top of the page that the table is on. You may need to scroll down to find it (if it is not near the top of the page).

Website links are current as of the effective date of the publication of the guideline. If a website link no longer works, contact the MTO Corridor Management Office closest to you (See section 4.1 for locations) and request the latest link.

1.4.3 Key information

Whenever you see a key beside a box, as shown below, the information in the box summarizes the topic. Here is an example:

![Key icon]

If MTO has adopted a HAMP or I-HAMP, all action taken with respect to access connections shall be in conformance with the HAMP or I-HAMP unless MTO approves exceptions or variances.

1.5 How to find things in this guideline

This guideline is organized into the following chapters:

**Chapter 2: What is Access Management?**

Provides background information about access management, what authority MTO has over access management, and the types of MTO permits.

**Chapter 3: When you need an MTO permit**

Identifies the situations when you require an MTO permit for your development, as well as the conditions of the permit.
Chapter 4: How to apply for an MTO permit

Discusses the mechanics of obtaining, completing and submitting a permit application, as well as what happens once the permit is submitted.

Chapter 5: How decisions are made about permit approval

Discusses the various MTO standards that your proposal needs to comply with in order to be approved.

Chapter 6: If MTO turns down a permit application

Discusses what you can do if you want to appeal the decision or ask for a variance.

Chapter 7: About HAMPs and I-HAMPs

Describes HAMPs and I-HAMPs, the process surrounding them, and how they can benefit municipalities.

Chapter 8: Types of access connections

Describes the various types of access connections.

Chapter 9: Highway designation and MTO classification systems

Discusses how highways are designated and classified.

Chapter 10: Bibliography

Lists reference materials used in the preparation of this guideline.

Chapter 11: Glossary

Defines the terms used in this guideline.

Appendix A: Mutual access

Provides examples of typical ways to implement mutual accesses.

Appendix B: Design / construction standard drawings for entrances

Provides a list of standard drawings.

Appendix C: Access roads at freeway ramp terminals

Provides design parameters and an approval process for proposed access roads at freeway ramp terminals.
1.5.1 Tips if you are reading this guideline online

*How to search*

You can easily search the entire guideline for a word or phrase. Click *Edit* and then choose *Search* as shown below.

A window appears where you can enter your search criteria.
Introduction to this Guideline

How to use bookmarks

Bookmarks are a list of the headings used in the guideline. Just click any bookmark to go directly to that topic.

If you can’t see the list of bookmarks, click the Bookmarks tab to display it. You can close the Bookmarks tab by clicking it again.

1.6 How to print this guideline

Some of the pages in this guideline are foldout pages that are meant to be printed on 11” x 17” paper. If you don’t have the ability to print 11” x 17” pages, you will need to view these pages online. The content will be cut off when you print them on regular paper.

1.7 For additional information

Access management is one aspect of MTO’s Corridor Management business. You can obtain additional information about MTO’s Corridor Management business via our website:

2. What is Access Management?

2.1 Access management defined

Access management is the process that manages entrances onto provincial highways and onto roads in the vicinity of a provincial highway, within MTO’s permit control area. We refer to these entrances as access connections. Access management preserves the safety and efficiency of our provincial highways.

This guideline was developed to address road access connections only and does not cover connections and crossings designed solely for pedestrians, cyclists or transit vehicles.

2.2 Why we have access management

2.2.1 What role do provincial highways play?

The provincial highway network plays a key role in linking communities and supporting economic prosperity across Ontario. The huge expense of building new highways requires that we manage our existing network well.

2.2.2 How does land use development impact highways?

Transportation and land use are inextricably linked. The transportation and land use cycle begins as major improvements in the highway network change the accessibility of land (see Figure 1). Improved accessibility causes land values to increase and stimulates development outside the existing built-up area. Effective land use planning, access management and other measures such as transportation demand management, high occupancy vehicle lanes, transit-supportive planning and design or improvements to transit services are needed to manage intensification of development and related growth in travel demand. In the absence of such measures, conflicts typically emerge between transportation and development objectives.
What is Access Management?

2.2.3 What is the role of access management?

Effective highway access management helps to alleviate the transportation and land use cycle and thereby protects the public investment in the highway network. However, the transportation and land use cycle can only be managed effectively by addressing both the transportation network and adjacent land development simultaneously.

Access management is one of the tools that help to ensure land use planning and transportation infrastructure planning / design are coordinated, as follows:

- Good traffic flow is an essential component of successful development
- Good access management is essential to support traffic flow that may be associated with achieving development objectives
- Good access management ensures that provincial highway and municipal road corridors are protected to meet current and projected travel needs
What is Access Management?

- Good access management balances provincial highway needs with the needs for development access – it supports economic activity by supporting appropriate development adjacent to highways.

- Good access management helps to reduce urban sprawl.

Highways in the provincial highway network are classified by function based on the priority given to through-traffic movement (mobility) vs. land access (see Figure 2). The four functional classes are – freeways, arterials, collectors, and local roads. (You can find more information about MTO's classification systems in Chapter 9.)

For the safe and efficient movement of traffic, access management is particularly important along freeways and arterial highways. Access connections to property are typically secondary to mobility. However, access management is still necessary on collectors and locals, to address safety considerations and movement of traffic.

Figure 2: Access vs. Mobility
What is Access Management?

Without good access management, the function and character of highway corridors can deteriorate rapidly. Failure to manage access is associated with the following problems:

- Increase in vehicular collisions
- Reduction in highway efficiency
- Increased commute times, fuel consumption and vehicular emissions as numerous access connections and traffic signals intensify congestion along the highway network

2.3 A balancing act

On the one hand, MTO’s mandate is to preserve the safety and efficiency of Ontario’s provincial highway network and the Ontario government’s investment in the highway infrastructure.

On the other hand, MTO’s goal is to do this in a way that supports economic development. (See section 2.6, Best practices for a win-win result… for details.)

The result is a balancing act to try to achieve the optimal balance between preserving the highway network and enabling development.

A safe and efficient transportation system is critical to Ontario’s quality of life, a strong economy and a clean and healthy environment. Poorly implemented highway access management typically impacts the provincial highway network, the municipal road system and the land use developments they service. This can affect the long-term economic viability of the development itself and the quality of life for area residents.

Correction of poorly implemented highway access management “after the fact” is typically more difficult, more disruptive and costly, and must compete with other provincial highway and municipal road improvement projects for funding.
2.4 Principles of access management

Access management seeks to limit and consolidate access connections (entrances) along provincial highways while promoting a supporting municipal roadway network that will sustain land use development. The result is a provincial highway network that functions safely and efficiently for its useful life. The goals of access management are accomplished by applying the following principles:

1. Limit direct access connections to provincial highways.

   Highways serving higher volumes of provincial traffic require strict control over access connections, while minor collector and local highways can accommodate more frequent and direct access connections.

2. Locate signals in a way that favours through movements of traffic.

   Long, uniform spacing of intersections and signals on provincial highways makes it easier to coordinate traffic signals to ensure movement at the desired speed. Spacing of intersections is important even for unsignalized roads. If an access connection that is not properly located later becomes signalized, it can cause substantial increases in travel time and reduced operating speeds.

3. Preserve the functional intersection areas and functional interchange areas.

   The functional area is the area within the intersection or interchange where motorists are decelerating and manoeuvring into the appropriate lane to stop or complete a turn. Access connections that are too close to intersections or interchange ramps can cause serious traffic problems.

   Access to facilities that are important to the more efficient and sustainable operation of the highway, such as transit stations, transit park-and-ride facilities and carpool parking lots, may be permitted closer to the highway interchange or intersection than is specified in this guideline. These must be carefully planned and designed with consideration for their effects on safety, traffic operations and congestion.
4. Limit and separate the number of direct access connections.

Drivers make more mistakes and are more likely to be involved in collisions when there are complex driving situations created by numerous access connections. Conversely, simplifying the driving task contributes to improved traffic operations and fewer collisions. A less complex driving environment is accomplished by limiting the number and type of access connections to the highway.

5. Remove turning vehicles from through-traffic lanes.

Turning lanes allow drivers to decelerate gradually out of the through lane and wait in a protected area for an opportunity to complete a turn, thereby reducing the severity and duration of conflict between turning vehicles and through traffic. They also improve the safety and efficiency of highway intersections.

2.5 Benefits of access management

*Road Users*

- Face fewer decision points and traffic conflicts, which simplifies the task of driving, cycling or walking and may increase road user safety.

- Experience fewer traffic delays and may arrive more quickly at their destinations.

*Businesses*

- Are served by a more efficient highway network that captures a broader market area.

- Benefit from stable property values due to a well-managed highway corridor.

- Experience a more predictable and consistent development environment.

- The trucking industry benefits from reduced delay and increased safety, which results in lower transportation costs and shorter delivery times.
What is Access Management?

**Government**

- Preserves the government’s investment in the infrastructure of the provincial highway network.
- Benefits from the lower cost of delivering an efficient and safe transportation network.
- Benefits from improved internal and intergovernmental coordination.
- Is more effective in accomplishing its transportation objectives.
- Provides effective tools to support and implement strong and effective land use planning reforms.

**Municipalities**

- Receive a safer transportation network.
- Benefit from less need for highway widening, which causes displacement of businesses, homes, and communities.
- Benefit from more attractive highway corridors.
- Help protect and preserve their investment in transportation facilities and may reduce capital improvement costs on their roadways.
- Are provided with a tool to help them make good land use planning decisions.
- Helps achieve goals, such as intensification that works without an increase in traffic congestion.

**2.6 Best practices for a win-win result...**

So what is the best way for everyone to work together in order to achieve the win-win result we talked about earlier? This guideline is a good place to start. It’s one of the tools we have to ensure that land use planning is coordinated with transportation infrastructure planning and design.
2.6.1 MTO

MTO will be more engaged in the land use planning and development process, both early and throughout the process. As well as this guideline, MTO will continue to develop other tools to assist with integrating its new access management policies and standards into municipal land use planning (Official Plans, Secondary Plans, Master Transportation Plans, etc.)

2.6.2 Municipalities and stakeholders

Municipalities and stakeholders need to contact MTO early in their planning and development processes. Involving MTO at the right time is the KEY to success because that is when there is still time to consider and implement access management alternatives. MTO will work with you early on to ensure success.

Access management requirements can be successfully implemented in a timely and cost-effective manner if they are addressed during:

- general municipal planning and document development process
- planning of municipal roads
- site specific land use planning and development

Each of these is discussed in more detail below.

*During general planning and document development*

- Address land-use development and transportation objectives *at the same time*.
- Schedule the necessary lead time to address highway access management in the planning and development process of Official Plans, Master Transportation Plans, Environmental Assessments (EA) for municipal roads, Secondary Plans, Plans of Subdivision, lot severances, building permits, etc.
- Budget the associated implementation costs for highway access management (which may include development charges bylaws).
- View transportation planning in the same way that you view other servicing issues, like water, sewer, etc.
What is Access Management?

- Consider the possibility that solutions for land development and transportation planning may have to include areas beyond MTO’s permit control area.

- Remember, contact MTO early in the general planning and document development process to obtain input regarding highway access management requirements.

As well as the above, municipalities shouldn’t overlook the possibility of requesting the creation of a Highway Access Management Plan (HAMP) or Interchange Highway Access Management Plan (I-HAMP). A HAMP or I-HAMP might be the right solution for your situation. Be sure to check them out in Chapter 7.

When planning municipal roads

Strategically consider planning and design alternatives on municipal roads connecting to provincial highways, both in order to comply with highway access management standards, and to maintain or improve local traffic capacity and operation.

- Plan for the appropriate distance between the provincial highway and the first intersection of the municipal crossing road.

- Consider implementing new or improved municipal roads, including service roads, to better service and distribute local traffic.

- Consider implementing new or improved municipal road intersections to provide a single point of access to a number of local developments.

During site specific land use planning and development

Plan for an appropriate “mix” of land use development – both for lands with frontage along provincial highways and lands in the immediate area serviced by highway interchanges and at-grade intersections. This will support the utilization of lands in a way that is recognized by the municipality and avoid or minimize issues associated with direct highway access.

- Consider developments that have an adequate internal road system and alternate access points away from the highway.

- Plan for an appropriate distance between the provincial highway and the first commercial entrance on the municipal crossing road.
What is Access Management?

- Plan for a development density and mix of uses that can be appropriately accommodated within the capacity of the municipal transportation system.

### 2.7 What authority does MTO have over access management?

MTO exercises its access management responsibility under two acts of the Ontario government:

<table>
<thead>
<tr>
<th>Act …</th>
<th>MTO responsibility…</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Public Transportation and Highway Improvement Act R.S.O. 1990, c.P.50 - Sections 7, 24, 31, 34, 36, 38, 40, 41 and 42</strong>&lt;br&gt;This act is referred to as the <strong>PTHIA</strong>.</td>
<td><strong>Control:</strong>&lt;br&gt;▪ Designation of provincial highways&lt;br&gt;▪ Municipalities to obtain the consent of the Minister of Transportation to open, close or divert any road entering upon or intersecting a provincial highway&lt;br&gt;▪ Access to highways by issuing <em>Entrance permits</em> for highway access connections&lt;br&gt;▪ Land use and access in the vicinity of highways by issuing <em>Building and Land Use permits</em>&lt;br&gt;</td>
</tr>
<tr>
<td><strong>The Planning Act R.S.O. 1990, c.P.13 - Sections 3, 51(24)(a) &amp; (e), 51(25), 51(26) and 53(12)</strong></td>
<td><strong>Advise and comment:</strong>&lt;br&gt;▪ On land use proposals circulated either by a municipality (Municipal Plan Review) or by the Ministry of Municipal Affairs and Housing (One Window Planning Service)&lt;br&gt;▪ On related provincial highway matters and objectives</td>
</tr>
</tbody>
</table>
2.7.1 PTHIA

Under the PTHIA, MTO comments on all development applications (subdivisions, consents, zoning amendments, etc.) within its permit control area, in order to ensure there is no unacceptable or negative impact to the highway. Typically, MTO’s comments are specific to highway access and other permit related issues.

You will learn about MTO’s permit control area in Chapter 3.

Although MTO is not authorized to approve or object to land use planning applications, it does control whether its permits will be available. For example, if MTO advises a planning approval authority that an entrance permit would NOT be available and the authority approves the land use in question anyway, then the parcel would, for all intents and purposes, be landlocked. MTO is under no obligation to issue a permit.

Delegation of authority over permits

The authority to issue permits under the PTHIA has been delegated to the:

- Head, Corridor Management and/or Head, Operational Services and/or Manager of Engineering (Central Region, Eastern Region, Northeastern Region, Northwestern Region and West Region) and any alternate or person occupying such position in an acting capacity.

The Delegated Authority is responsible for reviewing permit applications, resolving conflicts, issuing permits, and enforcing policies if violations occur. The Delegated Authority, located at various “MTO Corridor Management Offices” (Refer to section 4.1) review permit applications, resolve conflicts, issue permits, and enforce policies if violations occur.
2.7.2 *Planning Act*

Under the *Planning Act*, MTO participates in municipal planning (Official Plans, Secondary Plans, Master Transportation Plans, etc.) MTO provides comments regarding provincial highways and broader transportation objectives to planning approval authorities such as the Ministry of Municipal Affairs and Housing (MAH); Single, Upper and Lower Tier Municipalities; Commissions, etc.

**Note:** The PTHIA and the *Planning Act* may be found on the Ontario government’s Service Ontario e-Laws website:

When You Need an MTO permit

3. When You Need an MTO permit

You need an MTO permit whenever you want to:
- Add or change an entrance onto a provincial highway
- Add or change an entrance onto a public road that is within MTO’s permit control area.
- Change the use of land that is within MTO’s permit control area.

3.1 What is an MTO permit?

There are two types of MTO permits with respect to access management – the one you need depends on whether the new entrance is to be constructed directly onto a highway or not.

3.1.1 Two types of permits for access management

**Entrance Permit:** Permits an access connection (entrance) to be constructed onto a provincial highway. (You can find more information about the access connection types in Chapter 8.)

**Building and Land Use Permit:** Permits an access connection (entrance) to be constructed onto an existing or proposed public road within MTO’s permit control area.

3.2 What is MTO’s permit control area?

MTO’s permit control area is the area in the vicinity of a provincial highway, within which any development requires an MTO permit.

*Figure 3* illustrates the extent of MTO’s permit control area for King’s highways.

*Figure 4* illustrates the extent of MTO’s control area for controlled-access highways.
For the purposes of this guideline, we distinguish between two categories of highways - controlled-access highways (CAH) and King’s highways (KH). We make this distinction because there are more stringent access management standards for controlled-access highways.

**Note:** MTO’s statutory authority for its permit control system, including highway access control, is set out in Sections 31, 34 (King’s Highway) and 38 (controlled-access highway) of the PTHIA.

To summarize the information in Figure 3 and Figure 4, an MTO permit is required if you want to:

**Table 2: Summary of when you need an MTO permit**

<table>
<thead>
<tr>
<th>An MTO permit is required if you want to ...</th>
<th>Within this distance ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place a building, structure, entrance or any road</td>
<td>45 m of the limit of any highway</td>
</tr>
<tr>
<td></td>
<td>180 m of the centre point of any intersection (on King's highways)</td>
</tr>
<tr>
<td></td>
<td>395 m of the centre point of any intersection or interchange (on controlled-access highways)</td>
</tr>
<tr>
<td>Place a sign</td>
<td>400 m of the limit of the highway</td>
</tr>
<tr>
<td>Change the use of land in a way that will generate large amounts of traffic</td>
<td>800 m of the limit of the highway</td>
</tr>
</tbody>
</table>
When You Need an MTO permit

Figure 3: MTO’s Permit Control Area for King’s Highways

“A” – 45 m Control Area - placement of buildings or other structures, entrances or any road

“B” – 400 m Control Area - placement of signs

“C” – 800 m Control Area - use of any land for the purpose of large traffic generators

“D” – 180 m Control Area - placement of buildings or other structures, entrances or any road within 180 metres of the centre point of an interchange / intersection
When You Need an MTO permit

Figure 4: MTO’s Permit Control Area for Controlled-Access Highways

“C” – 45 m Control Area - placement of buildings or other structures, entrances or any road
“B” – 400 m Control Area - placement of signs
“C” – 800 m Control Area - use of any land for the purpose of large traffic generators
“D” – 395 m Control Area - placement of buildings or other structures, entrances or any road within 395 metres of the centre point of an interchange / intersection
When is an MTO permit required?

You need an MTO permit for the following:

- New entrance onto a provincial highway, including temporary accesses
- New entrance onto a public road that is within MTO's permit control area
- Change in location or use of an existing entrance onto a provincial highway
- Change in location or use of an existing entrance onto a public road that is within MTO's permit control area
- Change in land use within MTO's permit control area
- Change in property ownership
- Paving an existing gravel entrance

**Note:** Access connections (entrances) that are already in existence along the provincial highway corridor and have been there for some time can continue to be used for their present use, regardless of whether the property owner can produce an MTO permit. However, any proposed change in use of that entrance requires a new permit from MTO and is subject to approval.

3.2.1 New access connections

A permit is required before constructing a new entrance onto a provincial highway or onto a public road (whether existing or proposed) that lies within MTO’s permit control area.

3.2.2 Temporary access connections

A permit is required before constructing a temporary access onto a provincial highway or onto a public road (whether existing or proposed) that lies within MTO’s permit control area.
3.2.3 Change in property ownership

Entrance permits for access connections to a provincial highway are issued to the property owner of the lot of record and are non-transferable.

Anytime there is a change in property ownership, the new property owner is required to obtain an entrance permit from MTO to recognize their entitlement to retain the existing access connection and to clearly state the permitted use of the existing entrance.

Upon purchasing a parcel of land with an access connection to a provincial highway, the new property owner is to obtain a new entrance permit from MTO.

If the use of the access connection is not changing, there is no fee for obtaining a new entrance permit for a change in property ownership.

3.2.4 Change in land use at an existing access connection

MTO strictly controls changes in use or upgrades of land serviced by existing access connections. For example, you would require a permit if you propose to redevelop your residential or farmstead lot for commercial purposes.

A new permit is required and all current standards and requirements need to be met for approval. The permit application will be treated as if the lot of record had no access connection to begin with.

3.2.5 Change in location of an existing access connection

A permit is required before changing the location of an existing entrance onto provincial highway or onto a public road within MTO's permit control area. All current standards and requirements shall be met as outlined in this guideline. (Requirements are covered in Chapter 5.)
3.2.6 Change in design of an existing access connection

A change in the design of an existing access connection will require the approval of MTO. The applicable design standard shall be a design standard approved for use by MTO. A change in access design is typically requested to accommodate the type of vehicle that will need to use the access connection (e.g. oversized farm machinery).

**Note:** A change in access design should not be confused with a change in use or upgrade of an existing access connection. A change in design of an access connection does not change the use of the existing access connection.

3.2.7 Paving an existing gravel access connection

An MTO permit is required for a property owner to pave an existing gravel access connection with asphalt.

**Note:** Paving stones, concrete or similar products are not permitted for use within the highway right-of-way limits. A property owner considering the use of these products shall consider either leaving the portion within the highway right-of-way limits in gravel or use asphalt.

Between the edge of pavement of the highway to the highway right-of-way limit, MTO requires a minimum compacted depth of asphalt to be 50 mm.

3.3 Conditions of an MTO Entrance permit

MTO has the authority to establish project-specific conditions and requirements that shall be satisfied prior to the issuance of an entrance permit. Typically such conditions and requirements may include, but are not limited to, the submission of a Traffic Impact Study, Stormwater Management Report, Class Environmental Assessment for Provincial Transportation Facilities, preliminary or detailed engineering design for highway improvements, legal agreement, Letter of Credit, etc.

The following standard conditions appear on the back of an MTO Entrance permit. Supplemental conditions may also be established by MTO at the time of issuance.
1. In addition to the conditions of a permit, the owner must meet all of the requirements of the local municipality and any other agency having jurisdiction.

2. Work on the installation of the entrance for which a permit is issued must be commenced within 6 months of the date that the permit is issued or the permit shall be void and cancelled by the Ministry.

3. The holder of a permit must notify the Ministry 48 hours prior to the commencement of construction.

4. The holder of a permit agrees to protect all survey markers and monuments in the vicinity of the work and agrees to replace any markers or monuments damaged.

5. All work related to the entrance installation authorized by a permit shall be carried out in accordance with the approved plans, specifications and agreements, and subject to the approval of the Ministry. The owner must bear all expenses related thereto.

6. Vegetation on the right-of-way must not be cut or trimmed without the written permission of the Ministry. Any cutting or trimming permitted must only be done under the supervision of the Ministry or its authorized agent at the expense of the owner.

7. The entrance authorized by a permit shall be designed, constructed and maintained in a manner that prevents surface water being discharged onto the highway. Failure to maintain the entrance in a satisfactory condition may result in the cancellation of this permit.

8. The owner is responsible for the construction, marking and maintenance of any detours required and for maintaining safety measures for the protection of the public during the construction of any works in respect of this entrance.

9. The design and specifications of an approved entrance may not be changed without the approval of the Ministry.

10. The use of an entrance may not be changed. An unauthorized change in the purpose of the entrance may result in the cancellation of the permit.

11. The owner of a property served by this entrance shall maintain the entrance in accordance with the requirements of the Ministry.
12. During construction of the entrance the owner shall ensure that the operation of the highway is not interfered with and that the right-of-way remains free of debris, earth or other material.

13. If there is an expiry date named on a permit and a further term is required, an application for renewal of the permit shall be made to the Ministry before the expiry date of this permit. An extension of the expiry date may be approved, approved with additional conditions or denied by the Ministry.

14. If a permit expires and is not renewed, all works constructed, maintained or operated under this permit, if the Ministry so requests, shall be removed at no cost to the Ministry and the right-of-way shall be restored to its original condition.

15. A permit may be cancelled at any time for breach of the regulations or conditions of this permit or for such other reasons as the Ministry at its sole discretion deems proper. An entrance permit to a controlled-access highway may be revoked at any time upon the Ministry providing an alternative entrance or a local frontage road or such other means of access as the Ministry deems proper and thereupon the entrance authorized by this permit shall be closed. When a permit is revoked for any reason, the property owner served by the entrance shall not be entitled to any compensation or damages by reason of or arising from the revocation of the permit.

16. If during the life of a permit any Acts are passed or regulations adopted which affect the rights herein granted, the said Acts and regulations shall be applicable to this permit from the date on which they come into force.

17. The owner shall hold harmless the Ministry for all damages and liabilities caused as a result of the works undertaken pursuant to this permit.

18. A permit is not transferable from one owner of the property to another. When a new owner acquires the property for which this permit is issued a new permit is required. Each new permit is subject to the standards and conditions applying at the time of issue. A permit transfer fee may be charged.
3.4 What associated costs should stakeholders plan for?

3.4.1 New Entrance Permit or Building and Land Use Permit

New access connections, upgrading of existing access connections, the installation of culverts, or other works within the limits of the highway right-of-way of a provincial highway are the financial responsibility of the stakeholder.

Upgrading of existing highway intersections, interchanges or other works as a result of land use development within MTO's permit control area are the financial responsibility of the stakeholder.

3.4.2 Traffic Impact Study

A Traffic Impact Study is a special study of the transportation needs and traffic impacts that land use development will have on the surrounding highway network. A Traffic Impact Study is used to identify needed transportation improvements, and to determine a stakeholder’s responsibility (financial and otherwise) towards warranted highway improvements. A Traffic Impact Study is to be prepared by a qualified consultant.

**Note:** It is the stakeholder’s responsibility to retain a qualified transportation consultant experienced in the preparation of a Traffic Impact Study. Effective January 1, 2010, all Traffic Impact Studies shall be undertaken by a consulting firm approved under MTO’s consultant Registry, Appraisal and Qualification System (RAQS) under the Traffic Impact Analysis specialty category. Also effective January 1, 2010, a Traffic Impact Study shall be signed and stamped by a Professional Engineer registered in the Province of Ontario taking responsibility for the Traffic Impact Study contents.

The cost of undertaking a Traffic Impact Study is the financial responsibility of the stakeholder.

To obtain a copy of MTO’s “General Guidelines for the Preparation of Traffic Impact Studies”, please contact the MTO Corridor Management Office closest to you (Refer to section 4.1) or visit the MTO Corridor Management website:

3.4.3 Class Environmental Assessment for Provincial Transportation Facilities (Class EA)

Although MTO may determine that a stakeholder is eligible for an MTO permit(s), the associated transportation improvements to support the land use development project may in some cases require the stakeholder to complete the environmental assessment process under the ‘Class Environmental Assessment for Provincial Transportation Facilities’ (Class EA). The Class EA applies as follows:

- The Class EA defines improvements that provide/cause a significant modification in traffic access as a Group B Project and specifies planning, design, consultation, documentation, etc. that shall be undertaken for Group B Projects. Typical Group B projects involve major improvements to existing provincial transportation facilities such as:
  - new, relocated or closed interchanges;
  - interchange improvements with major footprint modifications;
  - modification of interchanges that introduce or eliminate moves to or from any direction;
  - opening or closing of intersections with municipal roads.

- The Class EA defines improvements that provide/cause minor or no modification in traffic access as a Group C Project and specifies planning, design, consultation, documentation, etc. that shall be undertaken for Group C Projects. Typical Group C projects involve minor improvements to existing provincial transportation facilities such as:
  - widening through non-continuous auxiliary lanes or non-continuous turning lanes;
  - interchange and intersection improvements with minor “footprint” modifications;
  - improvements of interchanges that do not involve relocation, closing, or introduction or elimination of moves to or from any direction;
  - improvements of intersections with municipal roads.

When stakeholders undertake work that is defined under the Class EA, they do so “in their own right and under their own responsibility” (including filing of documents prepared under the Class EA study process).
Accordingly, **stakeholders** will be responsible for addressing challenges (including Part II Order requests) during their Class EA study process.

At the end of the Class EA study process, stakeholders will be required to prepare, and submit to MTO, a statement indicating that the Class EA process has been successfully completed. MTO will then either provide an environmental clearance statement supporting the issuance of an MTO permit or will request additional information.

Where lands are required from a **property owner** to accommodate the associated transportation improvements, **stakeholders** will be required to document the following during the Class EA study process to the satisfaction of MTO:

- Identify and document all lands required for right-of-way purposes to support the land use development project;

- Notify all affected **property owners** of the need for their land to accommodate the associated transportation improvements to support the land use development project, and to specially indicate these land requirements and **property owners** notifications in the documents prepared under the Class EA study process.

**Stakeholders** should familiarize themselves with MTO’s Class EA document, whenever their land use development project would require major or minor improvements to an existing provincial highway. In particular, **stakeholders** should be aware of the timelines involved in the Class EA consultation and documentation study process in order to obtain environmental clearance.

The cost of undertaking the Class EA study process is the financial responsibility of the **stakeholder**.

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**Note:**

The Class EA document may be obtained:

- via MTO’s public website:  

- for purchase, via the ServiceOntario Publications website:  
  [https://www.publications.serviceontario.ca/pubont/servlet/ecom/](https://www.publications.serviceontario.ca/pubont/servlet/ecom/)
When You Need an MTO permit

3.4.4 Highway Improvements Associated with Land Development

Highway improvements necessitated by land use development within MTO’s permit control area (Figure 3 and Figure 4), as specified in the PTHIA, will generally be the responsibility, financial and otherwise, of municipalities and stakeholders.

To clarify the respective responsibilities of MTO and municipalities and stakeholders, where land use development necessitates highway improvements, MTO has published the “Highway Improvements Associated with Land Development” guideline. This guideline clarifies the procedure to be followed by municipalities and stakeholders who shall directly or indirectly undertake the construction of highway improvements on a provincial highway right-of-way. It is intended to deal with highway improvements that are generally more complex than the construction of a standard commercial entrance.

To obtain a copy of MTO’s “Highway Improvements Associated with Land Development” guideline, please contact the MTO Corridor Management Office closest to you (Refer to section 4.1) or visit the MTO Corridor Management website:


3.4.5 Land Acquisition Associated with Land Development

In addition to section 3.4.3 and 3.4.4, all costs associated with the acquisition of land to construct highway improvements associated with land development shall be the responsibility, financial and otherwise, of municipalities and stakeholders.

The associated transportation improvements to support the land use development project may in some cases require a municipality or stakeholder to obtain land from a property owner and transfer such lands to either MTO or the municipality. Lands acquired for highway purposes become right-of-way under the ownership of MTO. Lands acquired for municipal crossing road purposes become right-of-way under the ownership of the municipality.
When You Need an MTO permit

Typical costs for property acquisition include, but are not limited to:

- the survey, plan preparation and registration;
- the actual purchase of the property(s);
- deed preparation, registration and certification of title;
- all associated legal fees.

MTO shall not, on the behalf of a municipality or stakeholder, invoke rights under the Expropriations Act to acquire lands to accommodate highway improvements to support land use development. A municipality or stakeholder shall obtain all lands from property owners as needed to accommodate the highway improvements.

If a municipality or stakeholder does not obtain the necessary lands to accommodate the highway improvements to support their land use development, an MTO permit(s) shall not be issued and the land use development shall not proceed until such time that the lands can be acquired.

3.4.6 Irrevocable Standby Letter of Credit (Letter of Credit)

A Letter of Credit is a financial guarantee from a major Canadian financial institution to provide monies in the event of default for the performance and the timely completion of a contract in accordance with an issued permit.

At the discretion of the applicable MTO Corridor Management Office, MTO may accept other means of financial security (e.g. certified cheque) in lieu of a Letter of Credit.

MTO reserves the right to request a Letter of Credit as a condition of issuing an entrance permit or any other permit, where it deems circumstances warranted such securities.
3.4.7 Relocation of utilities

Where the construction of an access connection necessitates the relocation or alteration to any public or private utility facility located within the highway right-of-way, the stakeholder is responsible for making the appropriate arrangements with the relevant utility owner and payment of all associated costs to relocate or alter the affected utility.

Relocation or alteration of public or private utilities requires MTO approval and typically the issuance of an Encroachment Permit.

3.4.8 Maintenance of access connections

The property owner of a lot of record served by an access connection from a provincial highway is responsible for maintaining the surface of the entrance.

MTO will maintain the shoulder of the highway. MTO will maintain the access culvert and will replace it when necessary, provided the access connection was built to MTO’s standards and is used in accordance with the terms of the entrance permit.
4. How to Apply for an MTO Permit

4.1 Where to get a permit application form

The same application form is used to apply for an Entrance Permit OR Building and Land Use Permit. You can obtain a permit application form from:

- A MTO Corridor Management Office closest to you. A listing of MTO Corridor Management Offices can be found on MTO’s Corridor Management website: http://www.mto.gov.on.ca/english/engineering/management/corridor/
  (Once you are at the website, search for Regions/Regional Area Offices.)
  (Once you are at the website, search for Entrances to Provincial Highways or Building Construction and Land Use.)

4.2 How to complete the permit application

If you are applying for a **Building and Land Use Permit**, complete section 1 at the top of the form and skip section 2.

If you are applying for an **Entrance Permit**, complete section 2 at the top of the form and skip section 1.

If you are applying for both a Building and Land Use Permit and an Entrance Permit, complete sections 1 and 2 at the top of the form.

All applicants should complete sections 3 through 7 of the permit application form.

If you have questions about filling out the permit application form, contact the MTO Corridor Management Office closest to you (See section 4.1 for locations).
4.3 How to submit the completed permit application

Mail the completed permit application along with the following to the MTO Corridor Management Office closest to you (See section 4.1 for locations):

All permit applications

All permit applications should include:

- Site plan or survey plan of the *lot of record* OR a hand-drawn sketch that shows:
  - The lot and surrounding roads with a North arrow
  - The lot dimensions (including the highway frontage)
  - The location of all existing buildings and entrances with dimensions and offsets from various property lines
  - The location of all proposed buildings and entrances with dimensions and offsets from various property lines
  - The location of site servicing systems (water, sanitary, telecommunications, etc.)

- If the lot of record has been created by severance, provide the application number, the year the severance took place, and the applicant’s name

- Proof of property ownership in the form of a deed, a tax bill, a lease agreement or a Ministry of Natural Resources Permit to access Crown Land.

- Permit fee (Make cheques payable to the Minister of Finance)

More complex permit applications

For more complex permit applications, such as industrial developments, commercial developments, shopping centres, residential subdivisions, recreational facilities, etc. you need to provide more information. Your contact at the local MTO Corridor Management Office will advise you what is required, depending on the situation. Common examples include:

- Stormwater Management Report
- Traffic Impact Study
How to Apply for an MTO Permit

- Site servicing plans
- Highway engineering drawings for highway improvements, including associated technical reports and surveys (geotechnical investigation, environmental assessment, legal surveys, electrical design, etc.)
- Legal agreement

4.4 What happens next

4.4.1 MTO’s permit administration process

This is a general description of the administration process followed by MTO. Prior to making a decision on a permit application, MTO assures itself that:

- The permit application is complete.
- The applicable fee for the permit application has been submitted.
- The property ownership has been verified. (The applicant has provided a copy of the deed for the lot of record.)
- The permit application conforms to land use zoning for the lot of record.
- The permit application complies with MTO’s access management policies and standards contained in this guideline.
- The permit application complies with previous correspondence and commitments.
- The design of the access connection is acceptable.
- A field investigation has been conducted.
- All of MTO’s on-site concerns for the development of the lot of record have been addressed.
Referral to MTO Regional Engineering

The MTO Corridor Management Office forwards the permit application to MTO’s Regional Engineering Office for review and approval if the proposed access connection:

- Is governed by an adopted [HAMP](#) or [I-HAMP](#).
- Services significant land use developments or major traffic generators (roads, industrial development, commercial development, shopping centre, residential subdivision, recreational facility, etc.)
- Falls within the limits of an [MTO Work Project](#).
- Is for access onto a controlled-access highway.
- Is within MTO’s [permit control area](#) of a controlled-access highway.

4.4.2 How you find out whether your permit application was accepted

Typically, you will be in communication with MTO throughout the process to provide additional information or attend site meetings. For simple permit applications (i.e. residential) you may just receive your permit in the mail along with any applicable conditions and a cover letter.

If you are denied a permit, you will be notified by mail explaining the reasons.

4.4.3 How long does it take?

Once you submit the permit application, you will usually be contacted by MTO within 10 business days.

In *simple permit applications*, such as residential, you may be contacted for more information to assess the permit application or to set up a site meeting. (Most applications for a permit require a site visit in order to determine a culvert size for the entrance.) It can take upwards of 10 business days to issue the actual permit, depending on staff workload and any additional information that is required.
In complex permit applications, such as for a major land use development, you will be advised of submission requirements (traffic studies, engineering plans, legal agreements, etc.) and the potential need for a HAMP or I-HAMP. The time required to review the permit varies depending on the complexity of the development and the quality and timeliness of the information provided to MTO. Given these factors, it can take upwards of 20 – 60 business days and in many situations longer, should the permit application be subject to MTO’s Class EA process and other MTO project requirements (i.e. review/approval of traffic studies, engineering plans, legal agreements, etc.).

You can obtain more information regarding MTO’s permit application Service Commitments at:

5. How Decisions are Made About Permit Approval

5.1 Steps in the decision-making process

In order to protect the safety, mobility and functionality of Ontario’s provincial highway network, MTO requires that a variety of standards be met for development within MTO’s permit control area. The higher the Access Management Classification of a highway, the more stringent the standards are.

Knowing the criteria that MTO uses will help municipalities and stakeholders improve their success rate in obtaining permits.

The steps in the decision-making process are as follows:

- Step 1 – Find out if there is there an approved HAMP or I-HAMP
- Step 2 – Find out how the highway is classified
- Step 3 – Determine which standards apply
- Step 4 – Determine which policies affect the standards

5.2 Step 1 – Find out if there is an approved HAMP or I-HAMP

If MTO has adopted a HAMP or I-HAMP, all action taken with respect to access connections shall be in conformance with the HAMP or I-HAMP unless MTO approves an exception or variance.

For more information about HAMPs and I-HAMPs, refer to Chapter 7.
5.3 Step 2 - Find out how the highway is classified

The next step is to find out the Access Management Classification of the highway your property is adjacent to or in the vicinity of. This will determine access connection standards that are applicable for the highway. For access management purposes, highways are classified as shown in the Table 3 below.

Table 3: Access Management Classifications

<table>
<thead>
<tr>
<th>Access Management Classification System Category</th>
<th>Controlled-access Highway (CAH) or King’s Highway (KH)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A - Freeway</td>
<td>Fully CAH</td>
</tr>
<tr>
<td>1B - Staged Freeway</td>
<td>Fully CAH</td>
</tr>
<tr>
<td>2A - Principal Arterial</td>
<td>Fully CAH</td>
</tr>
<tr>
<td>2B - Arterial</td>
<td>CAH or KH</td>
</tr>
<tr>
<td>3 - Collector</td>
<td>KH</td>
</tr>
<tr>
<td>4 - Local</td>
<td>KH</td>
</tr>
</tbody>
</table>

5.3.1 King’s Highways vs. Controlled-access Highways

For the purposes of this guideline, we distinguish between two categories of highways - controlled-access highways (CAH) and King’s Highways (KH). We make this distinction because there are more stringent access management standards for controlled-access highways.

5.3.2 Why is it important to understand the Access Management Classification system?

Many of MTO’s standards apply differently for each classification of highway. If you are not sure which type of highway applies in your case, refer to the map in either Figure 5 (for Southern Ontario) or Figure 6 (for Northern Ontario). It’s best to view the maps online because you can zoom in to magnify the area you are interested in and locate a particular highway. The roads on the maps are colour coded according to their function.
The Access Management Classification within urban and built-up areas is the same as the adjacent sections of highway. However, in established, built-up urban areas MTO will consider permitting new access connections for infilling purposes, even if they are outside the normal access management policies and standards. (Refer to section 5.5.3 of this guideline for more information.)

5.3.3 More about highway designation and MTO highway classification systems

Provincial highways and proposed provincial highways are designated under the PTHIA as a:

- King’s Highway (section 7)
- controlled-access highway (section 36)

In addition, MTO can also designate highways as:

- secondary highway (section 40)
- tertiary road (section 41)
- resource road (section 42)

(The latter three designated highways will be considered King’s Highways in this guideline.)

The type of designation determines the extent and degree of the provisions and regulations of the PTHIA that apply.

MTO uses the Functional Classification system as its foundation for highway network planning, engineering and other classification systems.

The Access Management Classification system, along with the policies and standards contained within this guideline, protect the Functional Classification system by preserving the intended role, function, mobility and design characteristics of each provincial highway.

For more information about the above, we recommend that you refer to Chapter 9.
Figure 5: Highways in the Access Management Classification System - Southern Ontario
Figure 6: Highways in the Access Management Classification System - Northern Ontario
5.4 Step 3 - Determine which standards apply

5.4.1 Summary of standards to be applied

In order for your permit application to be considered, your proposal should typically comply with all of the following standards, which are described in detail in the remaining sections of this chapter:

- Distance between access connections (Access Spacing)
- Number of private access connections permitted per kilometre (Access Density)
- Minimum frontage requirements (for creation of new lots of record)
- Distance from intersections and interchanges
- Minimum sight distance requirements (visibility)
- Access connection depth
- Drainage

5.4.2 Desirable and minimum values

It is important to understand how desirable and minimum values are applied when MTO considers a permit application. Some of the above standards have both desirable and minimum values. This is how MTO determines whether to require a desirable or a minimum value:

- The first choice is to meet desirable values as supported by a Traffic Impact Study.
- The second choice, if it is necessary to address limitations imposed by factors such as topography or existing road patterns, is to exceed or at least meet the minimum values, as supported by a Traffic Impact Study.
- The third choice is to explore design alternatives to at least meet the minimum standards (e.g. access roads opposite ramp terminals, grade separations, roundabouts, pedestrian overpasses/underpasses), as supported by a Traffic Impact Study.
As an alternative to the application of desirable and minimum standards, MTO will consider the initiation of a Highway Access Management Plan (HAMP) or Interchange Highway Access Management Plan (I-HAMP). This would require a comprehensive Traffic Impact Study to identify technically sound approaches for meeting access management and development objectives. For more information about HAMPs and I-HAMPs we recommend that you refer to Chapter 7.

5.4.3 Distance between access connections (Access Spacing)

Proper spacing of access connections has a direct effect on highway safety and efficiency. MTO has established standards for the spacing of various access connection types, depending on whether the access connection is on a highway or a public road within MTO’s permit control area. (See Table 4 for details.)

Highways with higher Access Management Classifications require longer spacing between access connections, while highways with lower Access Management Classifications can have more frequent and more closely spaced access connections. (See Chapter 9 for more information about MTO’s Access Management Classification system.)

Access spacing standards have been established for both signalized and unsignalized public roads and commercial/private roads. The standards for unsignalized access connections ensure that if they need to be signalized in the future, they will conform to traffic signal progression requirements. MTO’s access spacing standards are provided in Table 4 and illustrated for each applicable Access Management Classification category in Figure 7, Figure 8, Figure 9, and Figure 10.

Separation requirements for private access connections

Private access connections should be separated from any other private access connection on the same side of the highway by a distance equal to half the value shown in Table 9. At a minimum, private access connections on the same side of the highway should be separated by at least 30 m.

MTO encourages that access connections be located opposite each other in order to minimize operational conflicts on the highway.

Private access connections will not be permitted within a right-turn channelization, auxiliary lane, taper, ramp or similar facility.
Table 4: Summary of standards for the spacing and density of various access connection types

<table>
<thead>
<tr>
<th>Highway Access Management Classification System Category</th>
<th>Controlled-Access Highway (CAH) or King’s Highway (KH)</th>
<th>Minimum Interchange Spacing*</th>
<th>Public Road Intersection Spacing Signalized / Unsignalized</th>
<th>Commercial / Private Road Access Spacing Signalized / Unsignalized**</th>
<th>Total Private Access Density*** / km / side</th>
<th>Minimum Total Pre-Severance Frontage Requirement for the Creation of a New Lot of Record****</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A - Freeway</td>
<td>Fully CAH</td>
<td>3.0 - 8.0 km - Desirable</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1B - Staged Freeway</td>
<td>Fully CAH</td>
<td>3.0 - 8.0 km - Desirable</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2A - Principal Arterial</td>
<td>Fully CAH</td>
<td>3.0 - 8.0 km - Desirable</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2B - Arterial</td>
<td>CAH / KH</td>
<td>N/A</td>
<td>1600 m – Desirable a</td>
<td>4</td>
<td>500 m</td>
<td>250 m</td>
</tr>
<tr>
<td>3 - Collector</td>
<td>KH</td>
<td>N/A</td>
<td>800 m - Minimum a</td>
<td>6</td>
<td>300 m</td>
<td>150 m</td>
</tr>
<tr>
<td>4 - Local</td>
<td>KH</td>
<td>N/A</td>
<td>400 m - Minimum a</td>
<td>8</td>
<td>250 m</td>
<td>125 m</td>
</tr>
</tbody>
</table>

(The colours shown above correspond to the colour for each Access Management Classification system category of the proposed highway on the maps in Figure 6 and Figure 7.)

All existing access connections to legal lots of record are permitted to remain. Creation of a new access connection for the creation of a new lot (e.g. severance by consent) or change in access connection use (e.g. land use change – Residential / Farmstead to Commercial) is strictly controlled in accordance with this chart and the Highway Access Management Guideline.

* Desirable or minimum spacing between interchanges is measured from the centre point of the crossing road from one interchange to the centre point of the crossing road of the next interchange.

** New Commercial / Private Road access connections will only be considered if there is no existing Public Road or other Commercial / Private Road access located within the specified spacing requirement, regardless of which side of the highway it is located. New Commercial / Private Road access connections shall be located in accordance with the specified spacing requirement, which is measured from the centreline of the existing Public Road or other Commercial / Private Road.

***Total Private Access Density per km per side is the maximum density for any one side of the highway. The creation of a new access connection for the creation of a new lot (e.g. severance by consent) will only be considered if the Access Density can accommodate the new access connection, regardless if the Minimum Total Pre-Severance Frontage Requirement is met. Should the Access Density be maximized, but the total frontage of the lot of record equals or exceeds the Minimum Total Frontage Requirement for a new access connection, a Mutual Access may be considered provided it meets all other requirements outlined in the Mutual Access section of this guideline.

**** The creation of a new access connection for the creation of a new lot (e.g. severance by consent) requires that the lot of record meet the Minimum Total Pre-Severance Frontage Requirements for a new access connection, in addition to the Access Density requirement. Where the total pre severance frontage is less than the minimum for a new access connection, a Mutual Access may be considered provided it meets the Minimum Total Pre-Severance Frontage Requirements for a Mutual Access and all other requirements outlined in the Mutual Access section of this guideline.

a New Public Road connections will only be considered at approved locations for future grade-separated interchanges.

b MTO requires all requests for new Public Roads or new Commercial / Private Roads to meet the 1600 m desirable spacing as indicated. Consideration by MTO to reduce the spacing below 1600 m to any point down to and including the 800 m minimum will only be considered based on the submission of a Traffic Impact Study. The Traffic Impact Study shall clearly indicate and support a reduction in spacing that will not affect the overall role, function, mobility and design characteristics of the highway corridor.

c Minimum spacing is based on a 70 km/h posted speed limit or greater on the highway. MTO will consider a reduction in the Public Road or Commercial / Private Road spacing requirement where the posted speed limit is lower than 70 km/h based on the submission of a Traffic Impact Study and the recommended reduction meets the requirements of Ontario Traffic Manual Book 12. MTO will work cooperatively with municipalities/developers to determine appropriate intersection spacing and other roadway characteristics where needed to support intensification and more compact development within communities.
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Figure 7: Intersection Spacing Standards for Class 2A – Principal Arterial Highways

Existing Public Road

Proposed Public Road

Existing Public Road

Proposed Public Road

Class 2A Principal Arterial Highway (Fully CAH)

Note:
Intersection spacing for Public Roads and Commercial/Private Road access connections may be increased/decreased based upon MTO’s review of a Traffic Impact Study.
Figure 8: Intersection Spacing Standards for Class 2B - Arterial Highways

- **Existing Public Road or**
  - Commercial / Private Road Access
    - 1600 m - Desirable
    - 800 m - Minimum

- **Proposed Public Road or**
  - Commercial / Private Road Access
    - 1600 m - Desirable
    - 800 m - Minimum

- **Existing Public Road or**
  - Commercial / Private Road Access
    - 1600 m - Desirable
    - 800 m - Minimum

- **Proposed Public Road or**
  - Commercial / Private Road Access

---

**Note:**
Intersection spacing for Public Roads and Commercial / Private Road access connections may be increased / decreased based upon MTO's review of a Traffic Impact Study.
Figure 9: Intersection Spacing Standards for Class 3 - Collector Highways

Note:
Intersection spacing for Public Roads and Commercial/Private Road access connections may be increased/decreased based upon MTO’s review of a Traffic Impact Study.
Figure 10: Intersection Spacing Standards for Class 4 - Local Highways

Existing Public Road or

Commercial / Private Road Access

400 m - Minimum

Proposed Public Road or

Commercial / Private Road Access

400 m - Minimum

Existing Public Road

400 m - Minimum

Proposed Public Road or

Commercial / Private Road Access

Note:
Intersection spacing for Public Roads and Commercial / Private Road access connections may be increased / decreased based upon MTO’s review of a Traffic Impact Study.
5.4.4 Number of private access connections permitted per kilometre (Access Density)

The access density calculation determines the maximum number of private access connections permitted per kilometre on each side of the highway. If there are already a maximum number of private access connections, MTO will typically decline the permit application (although it may consider a mutual access connection, discussed in section 5.5.8).

Access density refers to the number of private access connections per kilometre on each side of a highway. The higher the Access Management Classification of the highway, the lower the access density permitted.

To determine the total access density permitted for a class of highway, MTO measures the distance in metres between existing intersections from centreline to centreline, and then multiplies this distance by the Access Density Factor from Table 5. Each class of highway has its own Access Density Factor.

Table 5: Access density factors for creating a new lot of record

<table>
<thead>
<tr>
<th>Access Management Classification System Category</th>
<th>Access Density /km/side</th>
<th>Access Density Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A – Principal Arterial</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2B – Arterial</td>
<td>4/km/side (4/1000 m)</td>
<td>.004</td>
</tr>
<tr>
<td>3 – Collector</td>
<td>6/km/side (6/1000 m)</td>
<td>.006</td>
</tr>
<tr>
<td>4 – Local</td>
<td>8/km/side (8/1000 m)</td>
<td>.008</td>
</tr>
</tbody>
</table>
In counting the number of existing access connections per side, MTO excludes certain types of access connections, as shown below:

<table>
<thead>
<tr>
<th>Types of access connections included in count:</th>
<th>Types of access connections excluded from count:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unsignalized commercial or private road access</td>
<td>• Field access</td>
</tr>
<tr>
<td>• Farmstead access</td>
<td>• Auxiliary access</td>
</tr>
<tr>
<td>• Residential access</td>
<td>• Temporary access</td>
</tr>
<tr>
<td>• Mutual access</td>
<td></td>
</tr>
<tr>
<td>• Utility access</td>
<td></td>
</tr>
<tr>
<td>• Resource access</td>
<td></td>
</tr>
</tbody>
</table>

For a comprehensive listing of all access connection types, see Chapter 8.

Field and Auxiliary access connections are excluded from the count because they generate very low volume and are typically used on a very limited and/or seasonal basis.

Temporary access connections are excluded because they are issued for a specified period of time and will ultimately be removed.

However, whenever MTO considers permitting a new private access connection, it reviews all types of existing access connections located along the property owner’s total highway frontage. MTO will request removal of all non-essential Field and Auxiliary access connections as a condition of any new entrance permit.

This helps to preserve the safety and efficiency of the provincial highway network. In addition, removal of non-essential access connections improves MTO’s drainage system, assists with maintenance operations such as shoulder grading and snowplowing, and reduces future MTO Work Project costs such as entrance reconstruction and culvert replacement.

**Note:** In calculating the permitted Total Access Density, the following threshold is used for rounding purposes:

- <0.9 = 0 access connections
- >0.9 = 1 access connection
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For example a calculated Total Access Density of 2.89 rounds down to 2, meaning that 2 access connections are permitted per kilometre. However, a calculated Total Access Density of 2.9 rounds up to 3, meaning that 3 access connections per kilometre are permitted. This tolerance allows for 10% flexibility in the calculation.

The four examples that follow will help illustrate how MTO determines whether to permit additional access connections.

**Example 1**

On a Class 2B - Arterial Highway the distance between two public roads is 1600 m. There are 2 private access connections along the east side of the highway and 3 private access connections along the west side of the highway.

**East Side:**  
1600 x .004 = 6.4 calculated  
Therefore, 6 access connections are permitted (Total Access Density)  
6 – 2 (existing access connections) = 4  
Therefore, 4 additional private access connections could be permitted by MTO along the east side of the highway.

**West Side:**  
1600 x .004 = 6.4 calculated  
Therefore, 6 access connections are permitted (Total Access Density)  
6 – 3 (existing access connections) = 3  
Therefore, 3 additional private access connections could be permitted by MTO along the west side of the highway.
Example 2

On a Class 2B - Arterial Highway the distance between two public roads is 1270 m. There are a total of 5 private access connections along the north side of the highway and 2 private access connections along the south side of the highway.

**North Side:**

\[ 1270 \times 0.004 = 5.08 \text{ calculated} \]

Therefore, 5 access connections are permitted (Total Access Density)

\[ 5 - 5 \text{ (existing access connections)} = 0 \]

Therefore, no additional private access connections would be permitted by MTO along the north side of the highway. The total number of permitted access connections is already maximized for the north side of the highway.

**South Side:**

\[ 1270 \times 0.004 = 5.08 \text{ calculated} \]

Therefore, 5 access connections are permitted (Total Access Density)

\[ 5 - 2 \text{ (existing access connections)} = 3 \]

Therefore, 3 additional private access connections could be permitted by MTO along the south side of the highway.
Example 3

On a Class 3 - Collector Highway the distance between two public roads is 1675 m. There are a total of 6 private access connections along the east side of the highway and 11 private access connections along the west side of the highway.

East Side:

1675 x .006 = 10.05 calculated

Therefore, 10 access connections are permitted (Total Access Density)

10 – 6 (existing access connections) = 4

Therefore, 4 additional private access connections could be permitted by MTO along the east side of the highway.

West Side:

1675 x .006 = 10.05 calculated

Therefore, 10 access connections are permitted (Total Access Density)

10 – 11 (existing access connections) = -1

Therefore, no additional private access connections would be permitted by MTO along the west side of the highway. The total number of permitted access connections is already exceeded for the west side of the highway.
Example 4

On a Class 4 - Local Highway the distance between two public roads is 1150 m. There are a total of 7 private access connections along the north side of the highway and 5 private access connections along the south side of the highway.

**North Side:**

\[ 1150 \times 0.008 = 9.2 \text{ calculated} \]

Therefore, 9 access connections are permitted (Total Access Density)

\[ 9 - 7 \text{ (existing access connections)} = 2 \]

Therefore, 2 additional private access connections could be permitted by MTO along the north side of the highway.

**South Side:**

\[ 1150 \times 0.008 = 9.2 \text{ calculated} \]

Therefore, 9 access connections are permitted (Total Access Density)

\[ 9 - 5 \text{ (existing access connections)} = 4 \]

Therefore, 4 additional private access connections could be permitted by MTO along the south side of the highway.
5.4.5 Minimum frontage requirements (for creation of new lots of record)

*Pre-Severance Frontage*

To qualify for a severance, a property owner’s total pre-severance highway frontage shall meet the minimum frontage requirements shown in Table 6. The minimum frontage requirement helps to ensure that the average access density for each Access Management Classification system category is maintained.

<table>
<thead>
<tr>
<th>Access Management Classification System Category</th>
<th>Minimum Total Pre-Severance Frontage Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Access Connection</td>
</tr>
<tr>
<td>2A – Principal Arterial</td>
<td>N/A</td>
</tr>
<tr>
<td>2B – Arterial</td>
<td>500 m</td>
</tr>
<tr>
<td>3 – Collector</td>
<td>300 m</td>
</tr>
<tr>
<td>4 – Local</td>
<td>250 m</td>
</tr>
</tbody>
</table>

Where the total pre-severance highway frontage is less than the minimum for a new access connection, MTO may consider allowing a mutual access. For more information about mutual accesses, refer to section 5.5.8 of this guideline.

*New Lot of Record*

In addition to the above, to qualify for a highway access connection, a new lot of record is required to have a minimum amount of highway frontage. One reason for this is to accommodate the appropriate entrance design.

As a general rule, the required minimum highway frontage for new lots of record is:

- 45 m where the posted speed is 70 km/h or greater
- 32 m where the posted speed is less than 70 km/h.
Note: There are some exceptions to the above for infill development in built-up urban areas. For details, see section 5.5.3.

These minimum highway frontages apply when MTO’s minimum sight distance requirements can be met for the new access connection. If the minimum sight distance requirement cannot be met, MTO will require increased minimum frontage to accommodate minimum visibility requirements as outlined in section 5.4.7 of this guideline.

5.4.6 Distance from intersections and interchanges

As a rule, access connections cannot be located within a Functional Intersection Area or a Functional Interchange Area. In addition, access connections are not permitted within a right-turn channelization, auxiliary lane, taper or similar facility at an intersection or interchange.

In the future, in order for MTO to achieve its transit objectives to reduce auto demand and promote transportation sustainability, exceptions to this guideline may occur to accommodate standalone carpool and transit parking facilities. Exceptions for stand alone transit and transit-supportive parking facilities will be considered on a case by case basis however, the development of these facilities shall have regard for the policies and standards of this guideline to ensure the safety and efficiency of traffic operations.

**Functional Intersection Area**

It is preferable to prohibit left turns into and out of access connections within the Functional Intersection Area along undivided highways.

The Functional Intersection Area is the section of highway or crossing road that extends both upstream and downstream from the physical intersection area itself. This area is controlled to enable a motorist to enter and pass through an intersection before having to consider a potential conflict at a subsequent access connection.
Controlling access connections in the vicinity of intersections provides for a safer driving environment. Inadequate spacing of access connections from an intersection can result in problems with traffic operation, safety and capacity. These problems can be caused by blocked access connections in close proximity to intersections, conflicting and confusing turns at intersections, insufficient weaving distances, and backups from a downstream access connection into an intersection.

Desirable and minimum offset spacing criteria from intersections

See Figure 11, Figure 12 and Figure 13 for the desirable and minimum offset spacing criteria that apply to various types of access connections.

The desirable offset spacing criteria will apply to requests for new access connections or a change in use or upgrade of an existing access connection. The desirable offset spacing criteria are not to be applied retroactively on a stand-alone basis. Existing access connections that do not meet the desirable offset spacing criteria will be permitted to remain for their existing use. However, MTO will use its best efforts to achieve the desirable offset spacing criteria as abutting lands are developed and re-developed, or as MTO undertakes highway improvements by way of MTO Work Projects.

Functional Interchange Area

Freeway interchanges provide the means of moving traffic between freeways and crossroads.

As a general rule, public road, commercial / private road and private access connections are not to be located within the Functional Interchange Area, unless the location meets MTO’s offset spacing criteria provided in, Figure 14, Figure 15 and Figure 16. Access connections are not permitted within a right-turn channelization, auxiliary lane, taper or similar facility at an interchange.

The Functional Interchange Area is the section of highway or crossing road that extends both upstream and downstream from the physical freeway ramp terminal area itself. This area is controlled to enable a motorist to enter and pass through the freeway ramp terminal intersection before having to consider a potential conflict at a subsequent access connection.
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Properties surrounding interchanges have become focal points for land use development. Therefore, public road, commercial / private road and private access connections to support land use development at interchanges shall be sufficiently spaced from freeway ramp terminals.

Where public road, commercial / private road and private access connections are placed too close to the freeway ramp terminals along the crossroad, heavy weaving volumes, complex traffic signal operations, frequent collisions, and congestion have resulted.

Adequate spacing and design of access connections along the crossroad at an interchange avoids traffic backups, both on the freeway and the crossroad itself, and ensures the safe and efficient operation of the freeway ramp terminals with the crossroad.

Desirable and minimum offset spacing criteria from freeway ramp terminals

See Figure 14, Figure 15 and Figure 16 for the desirable and minimum offset spacing criteria that apply between a freeway ramp terminal and a public road, a commercial / private road and a private access connection.

The desirable offset spacing criteria will apply to requests for new access connections or a change in use or upgrade of an existing access connection. The desirable offset spacing criteria are not to be applied retroactively on a stand-alone basis.

Existing access connections that do not meet the desirable offset spacing criteria will be permitted to remain for their existing use. However, MTO will use its best efforts to achieve the desirable offset spacing criteria as abutting lands are developed and re-developed, or as MTO undertakes highway improvements.

Access roads at freeway ramp terminals

Access roads at freeway ramp terminals have been provided on a limited case-by-case basis in Ontario. MTO may consider an access road opposite a freeway ramp terminal in high volume urbanized areas. This solution would only be considered as a last resort after all other alternatives have been exhausted and an I-HAMP is established.

MTO will not consider an access road opposite a freeway ramp terminal in order to allow the development of greenspace land in rural areas.
Appendix C provides MTO’s design parameters and an approval process for a proposed access road at a freeway ramp terminal. MTO will not consider an access road if it is the only means of access for the development. MTO may consider one as a secondary access to the site.
### Figure 11: Functional Intersection Area - Desirable Offset Spacing Criteria - Private Access Connections

<table>
<thead>
<tr>
<th>Functional Intersection Area - Desirable Offset Spacing Criteria - Private Access Connections</th>
<th>Desirable Offset Spacing Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A – Upstream on the highway</strong></td>
<td>100 km/h Posted Speed = 250 m</td>
</tr>
<tr>
<td></td>
<td>90 km/h Posted Speed = 220 m</td>
</tr>
<tr>
<td></td>
<td>80 km/h Posted Speed = 185 m</td>
</tr>
<tr>
<td></td>
<td>70 km/h Posted Speed = 160 m</td>
</tr>
<tr>
<td></td>
<td>60 km/h Posted Speed = 130 m</td>
</tr>
<tr>
<td></td>
<td>50 km/h Posted Speed = 105 m</td>
</tr>
<tr>
<td><strong>B – Downstream on the highway</strong></td>
<td>100 km/h Posted Speed = 250 m</td>
</tr>
<tr>
<td></td>
<td>90 km/h Posted Speed = 220 m</td>
</tr>
<tr>
<td></td>
<td>80 km/h Posted Speed = 185 m</td>
</tr>
<tr>
<td></td>
<td>70 km/h Posted Speed = 160 m</td>
</tr>
<tr>
<td></td>
<td>60 km/h Posted Speed = 130 m</td>
</tr>
<tr>
<td></td>
<td>50 km/h Posted Speed = 105 m</td>
</tr>
<tr>
<td><strong>C – Approach side on the Public Road</strong></td>
<td>Desirable = 85 m</td>
</tr>
<tr>
<td></td>
<td>Minimum = 45 m</td>
</tr>
<tr>
<td><strong>D – Departure side on the Public Road</strong></td>
<td>Desirable = 85 m</td>
</tr>
<tr>
<td></td>
<td>Minimum = 45 m</td>
</tr>
</tbody>
</table>

**Notes:**
- Private access connections are typically Residential, Farmstead, Field or Auxiliary accesses. They do not include Public Road or Commercial / Private Road access connections.
- Distances provided in this Figure are provided to demonstrate minimum offset spacings for private access connections for corner and non-corner properties, in order to protect the safety and operational integrity of the intersection.
- Desirable offset spacing criteria typically apply to requests for new private access connections or a change in use / upgrade of an existing access connection.
- All distances are measured from the end of radius of the Public Road to the start of radius at the private access.
- Private access connections are not permitted within a channelization, auxiliary lane, taper or similar facility. Where such facilities exist, the offset spacing criteria will be measured from the start / end of the taper.
- Corner properties, which have frontage on both the Provincial Highway and the Public Road shall obtain all access from the Public Road.
- Existing private access connections which fall with the desirable offset spacing criteria are constraints located within the Functional Intersection Area and will be permitted to remain for their existing use.
- This Figure is not to be interpreted that MTO would grant an access connection to the Provincial Highway for corner properties where the lot frontage would meet or exceed the minimum offset spacing criteria.

**For Principal Arterials:**
- A & B are not applicable. Direct highway access is not permitted.
- C & D are not applicable where interchanges exist or are proposed. Reference Figures 15, 16 and 17.
- C & D are applicable where at-grade intersections are present and are not to be upgraded to interchanges.
**Figure 12:** Functional Intersection Area - Desirable Offset Spacing Criteria – Low Volume Commercial / Private Road Access Connections

<table>
<thead>
<tr>
<th>Clearance Type</th>
<th>Desirable Spacing Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – Approach side on the Public Road</td>
<td>Desirable = 85m, Minimum = 45m</td>
</tr>
<tr>
<td>B – Departure side on the Public Road</td>
<td>Desirable = 85m, Minimum = 45m</td>
</tr>
</tbody>
</table>

**Notes:**

A low volume commercial development is one that provides access to a small traffic generator that would not warrant intersection improvements on the Public Road.

MTO reserves the right to request a Traffic Impact Study for any low volume commercial development where it is deemed appropriate to determine whether or not intersection improvements are warranted on the municipal road itself.

Should intersection improvements be warranted from MTO’s review of a Traffic Impact Study, the commercial development would be considered a medium / large traffic generator and the offset spacing criteria in Figure 14 would apply.

Distances provided in this figure are provided to demonstrate desirable offset spacings for Commercial / Private Road access connections for corner and non-corner properties, in order to protect the safety and operational integrity of the intersection.

Corner properties, which have frontage on both the Provincial Highway and the Public Road must obtain all access from the Public Road.

Desirable offset spacing criteria typically apply to requests for new Commercial / Private Road access connections or a change in use / upgrade of an existing access connection.

All distances are measured from the end of radius of the Public Road to the start of radius at the Commercial / Private Road access.

Commercial / Private Road access connections are not permitted within a channelization, auxiliary lane, taper or similar facility. Where such facilities exist, the offset spacing criteria will be measured from the start / end of the taper.

Existing Commercial / Private Road access connections which fall with the desirable offset spacing criteria are constraints located within the Functional Intersection Area and will be permitted to remain for their existing use.

**For Principal Arterials:**
- A & B are not applicable where interchanges exist or are proposed. Reference Figures 15, 16 and 17.
- A & B are applicable where at-grade intersections are present and are not to be upgraded to interchanges.

**Applicable Access Management Classification**
- 2B – Arterial
- 3 – Collector
- 4 – Local
### Functional Intersection Area - Desirable Offset Spacing Criteria - Public Road and Commercial / Private Road Access Connections (Medium / High Volume Traffic Generators)

<table>
<thead>
<tr>
<th>Access Management Classification</th>
<th>Desirable Offset Spacing Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 2A - Principal Arterial</td>
<td>400 m / 800 m (see Notes)</td>
</tr>
<tr>
<td>Class 2B - Arterial</td>
<td></td>
</tr>
<tr>
<td>Class 3 - Collector</td>
<td>400 m</td>
</tr>
<tr>
<td>Class 4 - Local</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

All new Public Road connections, which are to be located downstream of an existing highway intersection, shall meet the desirable offset spacing criteria in accordance with the above table.

All new medium / high volume Commercial / Private Road access connections, which are to be located downstream of an existing highway intersection, shall meet the desirable spacing offset criteria in accordance with the above table.

For Principal Arterials where at-grade intersections are present and are not to be upgraded to interchanges, the desirable offset spacing is 400 m. However, where interchanges are proposed, the desirable offset spacing is 800 m.

A medium / high volume Commercial / Private Road access connection is one that provides access to a commercial development which is a medium / large traffic generator, and which warrants intersection improvements on the Public Road.

MTO requires the submission of a Traffic Impact Study for all commercial developments which are medium / high volume traffic generators. A Traffic Impact Study will determine the warranted improvements for both the highway intersection as well as the Commercial / Private Road access connection on the intersecting Public Road.

Desirable offset spacing distances may be increased / decreased based upon MTO’s review of a Traffic Impact Study.

Distances provided in this Figure are provided to demonstrate desirable offset spacing for Public Roads and medium / high volume Commercial / Private Road access connections for corner and non-corner properties, in order to protect the safety and operational integrity of the intersection.

Corner properties, which have frontage on both the Provincial Highway and the Public Road shall obtain all access from the Public Road.

Desirable offset spacing criteria typically apply to requests for new Public Road and new medium / high volume Commercial / Private Road access connections.

All distances are measured from the centreline of the highway intersection to the centreline of the proposed Public Roads or proposed medium / high volume Commercial / Private Road access connection.

Existing Public Road or Commercial / Private Road access connections which fall within the desirable offset spacing criteria are constraints located within the Functional Intersection Area and will be permitted to remain for their existing use.
How Decisions are Made About Permit Approval

Figure 14: Functional Interchange Area - Access Connection Offset Spacing Criteria – Diamond I/C

<table>
<thead>
<tr>
<th>Functional Interchange Area - Access Connection Offset Spacing Criteria - Diamond I/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Lanes</td>
</tr>
<tr>
<td>Offset Spacing Criteria</td>
</tr>
<tr>
<td>W or X = Public Road, Service Road or signalized Commercial / Private Road Access Connections</td>
</tr>
<tr>
<td>800 m - Desirable</td>
</tr>
<tr>
<td>400 m - Minimum</td>
</tr>
<tr>
<td>W or X = Y or Z</td>
</tr>
<tr>
<td>125 - 185 m</td>
</tr>
<tr>
<td>Four Lanes or Greater</td>
</tr>
<tr>
<td>Offset Spacing Criteria</td>
</tr>
<tr>
<td>W or X = Public Road, Service Road or signalized Commercial / Private Road Access</td>
</tr>
<tr>
<td>800 m - Desirable</td>
</tr>
<tr>
<td>400 m - Minimum</td>
</tr>
<tr>
<td>W or X = Y or Z</td>
</tr>
<tr>
<td>125 - 185 m</td>
</tr>
</tbody>
</table>

Desirable / minimum offset spacing distance to first Public Road, Service Road or signalized Commercial / Private Road access. Variances below the desirable offset spacing criteria, down to and including the minimum offset spacing criteria, will only be considered where a valid case can be supported by MTO (e.g. traffic impact study).

Desirable offset spacing criteria to first non-signalized Commercial / Private Road access requires appropriate design in order to prevent left turns into / out of the access connection (e.g. median island on intersecting road, right-in / right-out island, right-in only, one-way access). Should appropriate design not be provided for, the right-in / right-out access connection(s) may not be placed between ramp terminal and the first downstream Public Road, Service Road or signalized Commercial / Private Road access.

Private Access Connections
Desirable offset spacing criteria to first private access connection (i.e. Residential entrance, Farmstead entrance, Field entrance); all turning movements permitted.

NOTES:
Desirable offset spacing criteria may be increased based upon MTO’s review of a Traffic Impact Study.

Desirable offset spacing criteria for W or X are measured from the end of radius or end of taper (whichever is applicable) of the ramp terminal to the centreline of a Public Road, Service Road or signalized Commercial / Private Road access.

Desirable offset spacing criteria for Y and Z are based on the following table measured from the end of radius or end of taper (whichever is applicable) of the ramp terminal to the start/end of radius of the first non-signalized Commercial / Private Road access or Private Access connection along the intersecting crossing road.

MTO will consider as an alternative to the application of desirable and minimum standards, the initiation of an I-HAMP through a comprehensive Traffic Impact Study to identify technically sound approaches for meeting access management and development objectives. For more information about I-HAMPs refer to Chapter 7.

<table>
<thead>
<tr>
<th>Posted Speed</th>
<th>Desirable Offset Spacing Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km / h</td>
<td>125 m</td>
</tr>
<tr>
<td>60 km / h</td>
<td>150 m</td>
</tr>
<tr>
<td>70 km / h</td>
<td>160 m</td>
</tr>
<tr>
<td>80 km / h</td>
<td>185 m</td>
</tr>
</tbody>
</table>
How Decisions are Made About Permit Approval

Figure 15: Functional Interchange Area - Access Connection Offset Spacing Criteria - Parclo A-4 I/C

<table>
<thead>
<tr>
<th>W or X</th>
<th>Y or Z</th>
<th>W or X</th>
<th>Y or Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 m</td>
<td>-</td>
<td>800 m</td>
<td>-</td>
</tr>
<tr>
<td>400 m</td>
<td>-</td>
<td>400 m</td>
<td>-</td>
</tr>
</tbody>
</table>

NOTES:
- Desirable offset spacing criteria for W or X are measured from the end of radius or end of taper (whichever is applicable) of the ramp terminal to the centreline of a Public Road, Service Road or signalized Commercial / Private Road access.
- Desirable offset spacing criteria for Y and Z are based on the following table measured from the end of radius or end of taper (whichever is applicable) of the ramp terminal to the start/end of radius of the first non-signalized Commercial / Private Road access or Private Access connection along the intersecting crossing road.

MTO will consider as an alternative to the application of desirable and minimum standards, the initiation of an I-HAMP through a comprehensive Traffic Impact Study to identify technically sound approaches for meeting access management and development objectives. For more information about I-HAMPs refer to Chapter 7.

### Posted Speed

<table>
<thead>
<tr>
<th>Speed (km/h)</th>
<th>Offset Spacing Criteria (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>125</td>
</tr>
<tr>
<td>60</td>
<td>150</td>
</tr>
<tr>
<td>70</td>
<td>180</td>
</tr>
<tr>
<td>80</td>
<td>185</td>
</tr>
</tbody>
</table>
Figure 16: Functional Interchange Area - Access Connection Offset Spacing Criteria – Parclo B-4 I/C

<table>
<thead>
<tr>
<th>Functional Interchange Area - Access Connection Offset Spacing Criteria - Parclo B-4 I/C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two Lanes</strong></td>
</tr>
<tr>
<td>Offset Spacing Criteria</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td><strong>X</strong></td>
</tr>
<tr>
<td>Intersecting Access</td>
</tr>
<tr>
<td>800 m - Desirable</td>
</tr>
<tr>
<td>400 m - Minimum</td>
</tr>
<tr>
<td><strong>Y or Z</strong></td>
</tr>
<tr>
<td>X = Public Road, Service Road or signalized Commercial / Private Road Access Connections</td>
</tr>
<tr>
<td>Desirable / minimum offset spacing distance to first Public Road, Service Road or signalized Commercial / Private Road access. Variances below the desirable offset spacing criteria, down to and including the minimum offset spacing criteria, will only be considered where a valid case can be supported by MTO (e.g. traffic impact study).</td>
</tr>
<tr>
<td>Y or Z = Non-signalized Commercial / Private Road Access Connections</td>
</tr>
<tr>
<td>Desirable offset spacing criteria to first non-signalized Commercial / Private Road access; right-in / right-out only. Right-in / right-out Commercial / Private Road access requires appropriate design in order to prevent left turns into / out of the access connection (e.g. median island on intersecting road, right-in / right-out island, right-in only, one-way access). Should appropriate design not be provided for, the right-in / right-out access connection(s) may not be placed between ramp terminal and the first downstream Public Road, Service Road or signalized Commercial / Private Road access.</td>
</tr>
<tr>
<td>Private Access Connections</td>
</tr>
<tr>
<td>Desirable offset spacing criteria to first private access connection (i.e. Residential entrance, Farmstead entrance, Field entrance); all turning movements permitted.</td>
</tr>
</tbody>
</table>

NOTES:
Desirable offset spacing criteria may be increased based upon MTO’s review of a Traffic Impact Study.

Desirable offset spacing criteria for X is measured from the end of taper of the ramp terminal to the centreline of a Public Road, Service Road or signalized Commercial / Private Road access.

Desirable offset spacing criteria for Y and Z are based on the following table measured from the end of radius or end of taper (whichever is applicable) of the ramp terminal to the start/endpoint of radius of the first non-signalized Commercial / Private Road access or Private Access connection along the intersecting crossing road.

MTO will consider as an alternative to the application of desirable and minimum standards, the initiation of a I-HAMP through a comprehensive Traffic Impact Study to identify technically sound approaches for meeting access management and development objectives. For more information about I-HAMPs refer to Chapter 7.

<table>
<thead>
<tr>
<th>Posted Speed</th>
<th>Desirable Offset Spacing Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km / h</td>
<td>125 m</td>
</tr>
<tr>
<td>60 km / h</td>
<td>150 m</td>
</tr>
<tr>
<td>70 km / h</td>
<td>160 m</td>
</tr>
<tr>
<td>80 km / h</td>
<td>185 m</td>
</tr>
</tbody>
</table>
New and upgraded access connections shall be designed to provide good visibility for both motorists entering the highway and motorists already travelling on the highway.

Unobstructed visibility is an important safety factor associated with an access connection. Proposed access connections shall meet MTO’s minimum sight distance (visibility) requirements.

**Minimum sight distance standards**

**Entering sight distance**

This standard represents the point of view of a motorist who is waiting to enter or cross the highway.

It is the distance that this motorist should be able to see in order to safely cross the highway or enter the highway and accelerate to the posted speed without being overtaken by an approaching vehicle.

The amount of distance required depends on the posted speed of the highway, whether the highway is divided, and the type of access connection being proposed. Table 7 and Table 8 show the distances required in each case.

**Stopping sight distance**

This standard represents the point of view of a motorist who is travelling on the highway.

It is the distance that this motorist should be able to see in order to stop safely if a problem occurs at the access connection.

The amount of distance required depends on the posted speed of the highway. Table 9 shows the standards for stopping sight distance.
Requirements

For safety, an entrance permit will not be issued by MTO unless the following requirements are satisfied.

- All new and changed access connections shall meet the Entering Sight Distance shown in Table 7 or Table 8.
- All new and changed access connections shall meet the Stopping Sight Distance shown in Table 9.
- All existing access connections should, at a minimum, meet the Stopping Sight Distance shown in Table 9.
- On an undivided highway, the sight distances shall be measured in both directions.
- On a divided highway, the sight distances shall be measured for the approach direction only.
- If the grade is 3% or greater, the sight distances shall be adjusted by the factors in Table 10.
- Access connections shall not be placed where the radius of the horizontal curve on the highway is less than shown in Table 11.

Measuring the sight distance

- A height of 1.08 m shall be used for the driver's eye level at the access connection location.
- The entering driver’s eye level shall be assumed to be 3.0 m back from the edge of pavement.
- A height of 1.08 m shall be used for the driver’s eye level in the oncoming vehicle.
Table 7: Entering Sight Distances for 2 lane highways

<table>
<thead>
<tr>
<th>Type of access connection</th>
<th>Distance required (m) on 2 lane highways by posted speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Residential access</td>
<td>150</td>
</tr>
<tr>
<td>Farmstead, field, auxiliary, or utility access</td>
<td>185</td>
</tr>
<tr>
<td>Public or service road access, commercial or private access, or resource access</td>
<td>225</td>
</tr>
</tbody>
</table>

Table 8: Entering Sight Distances for 4 lane undivided highways

<table>
<thead>
<tr>
<th>Type of access connection</th>
<th>Distance required (m) on 4 lane undivided highways by posted speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Residential access</td>
<td>160</td>
</tr>
<tr>
<td>Farmstead, field, auxiliary, or utility access</td>
<td>200</td>
</tr>
<tr>
<td>Public or service road access, commercial or private access, or resource access</td>
<td>240</td>
</tr>
</tbody>
</table>

Table 9: Stopping Sight Distances

<table>
<thead>
<tr>
<th>Posted Speed (km/h)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Stopping Sight Distance (m)</td>
<td>105</td>
<td>130</td>
<td>160</td>
<td>185</td>
<td>215</td>
</tr>
</tbody>
</table>
How Decisions are Made About Permit Approval

Table 10: Adjustment Factors for grades over 3%

<table>
<thead>
<tr>
<th>Approach grade (%)</th>
<th>Posted Speed of Highway (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50</td>
</tr>
<tr>
<td>-6</td>
<td>1.1</td>
</tr>
<tr>
<td>-5</td>
<td>1.1</td>
</tr>
<tr>
<td>-4</td>
<td>1.1</td>
</tr>
<tr>
<td>-3 to +3</td>
<td>1.0</td>
</tr>
<tr>
<td>+4</td>
<td>0.9</td>
</tr>
<tr>
<td>+5</td>
<td>0.9</td>
</tr>
<tr>
<td>+6</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Table 11: Horizontal Curve Radius

<table>
<thead>
<tr>
<th>Posted Speed (km/h)</th>
<th>Horizontal Curve (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>300 m radius</td>
</tr>
<tr>
<td>60</td>
<td>600 m radius</td>
</tr>
<tr>
<td>70</td>
<td>600 m radius</td>
</tr>
<tr>
<td>80</td>
<td>1200 m radius</td>
</tr>
<tr>
<td>90</td>
<td>1200 m radius</td>
</tr>
</tbody>
</table>

Note: In Table 7, Table 8, Table 9, Table 10 and Table 11 the values provided against each posted speed are based on the design speed of the highway. (Posted speed + 20 km/h = Design speed)
How Decisions are Made About Permit Approval

The **sight distance** requirements and horizontal curve radius requirements in the above tables are based on following assumptions:

<table>
<thead>
<tr>
<th>Travel times</th>
<th>2-lane highways:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• 7.5 seconds (for passenger vehicles)</td>
</tr>
<tr>
<td></td>
<td>• 9.5 seconds (for single-unit trucks)</td>
</tr>
<tr>
<td></td>
<td>• 11.5 seconds (for multi-unit trucks)</td>
</tr>
<tr>
<td>4-lane highways:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 8.0 seconds (for passenger vehicles)</td>
</tr>
<tr>
<td></td>
<td>• 10.2 seconds (for single-unit trucks)</td>
</tr>
<tr>
<td></td>
<td>• 12.2 seconds (for multi-unit trucks)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Passenger vehicles</th>
<th>Used for <strong>residential access</strong> connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-unit trucks</td>
<td>Used for <strong>farmstead, field, auxiliary</strong> or <strong>utility</strong> accesses</td>
</tr>
<tr>
<td>Multi-Unit Trucks</td>
<td>Used for <strong>public, service, commercial</strong> or <strong>private</strong> road accesses and for <strong>resource</strong> accesses</td>
</tr>
</tbody>
</table>

**5.4.8 Access connection depth**

After vehicles turn off the highway, a minimum required distance shall exist before the next available turnoff.

The distance between arrow 1 and arrow 2 in **Figure 17** is the access connection depth. It is the distance between the end of the turning radius at an access connection and the next available turnoff.

**Figure 17: Access Connection Depth**

Arrow #1 shows the end of the turning radius as the vehicle leaves the highway.

Arrow #2 shows the next available turnoff into a parking lot.

The distance between the two arrows is the access connection depth.
A sufficient access connection depth enables motorists to clear the intersection of the access connection itself before encountering any further internal access connections or parking areas.

The desirable access connection depths for different land uses are provided in Table 12. Access connection depths may be increased or decreased based upon MTO’s review of a Traffic Impact Study.

Table 12: Access Connection Depths

<table>
<thead>
<tr>
<th>Land Use(s) Served by the Access Connection</th>
<th>Desirable Access Connection Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large shopping centre development (shopping mall, big box centre, etc.)</td>
<td>80 m</td>
</tr>
<tr>
<td>Sports or entertainment facility development (arena, drive-in theatre, baseball park, theme park, etc.)</td>
<td>80 m</td>
</tr>
<tr>
<td>Small shopping centre development (strip mall, supermarket complex, drug store complex, etc.)</td>
<td>25 m</td>
</tr>
<tr>
<td>Office building development</td>
<td>25 m</td>
</tr>
<tr>
<td>Drive-thru commercial development (coffee shops, fast food, etc.)</td>
<td>15 m</td>
</tr>
</tbody>
</table>

5.4.9 Drainage

New access connections or changes in the use of an access connection that require a new culvert shall not impede the existing flow of water within the ditch or cause water to flow onto the highway or shoulder.

Access connections should be constructed so they do not:

- cause water to enter onto the highway or shoulder
- interfere with the existing drainage system on the right-of-way or any municipal drainage system
- cause flooding on adjacent lands

The highway drainage system is not designed to serve the drainage requirements of abutting or other properties beyond pre-development historical flow rates. Drainage onto the highway right-of-way shall not exceed the pre-development historical flow rates.
At their own expense, stakeholders shall provide drainage culverts or structures for the access connection. This will become an integral part of the existing drainage system and the property of MTO. The type, design, diameter, length and condition of drainage culverts or structures shall conform to MTO drainage design standards.

The general requirements for the placement of drainage culverts or structures are as follows:

1. Culverts are open-ended underground pipes conveying stormwater under an access connection. They form part of the highway drainage system.

2. Culverts required for new or redesigned access connections shall be of sufficient diameter to maintain the free flow of water in the ditch.

3. Generally, the minimum diameter of culverts for residential and commercial access connections is:
   - <10 m in length – 400 mm diameter
   - >10 m in length – 500 mm diameter

4. Generally, the minimum diameter of culverts for a public road is 600 mm.

5. When the highway ditch is part of a municipal drain, the diameter of the culvert is subject to municipal requirements for that specific municipal drain. MTO will liaise with the municipal drainage superintendent to establish the diameter of the culvert.

6. Where the upstream culvert is of greater diameter than the minimum standard, the culvert for the new access connection shall be at least the same diameter.

7. Supply and installation of culverts shall meet the applicable Ontario Provincial Standards for roads and public works (i.e. type, material, gauge, bedding, etc.).

8. Headwalls of any type at either end of the culvert are strictly prohibited.
5.5 Step 4 – Determine whether other policies apply

In addition to the standards and requirements described in Step 3, MTO is also governed by other policies that may affect the decision to issue a permit. These policies are outlined here – read through the headings to check whether any apply to you.

5.5.1 First principle: One lot = One access connection

1. Unless access rights have been purchased, each lot of record with highway frontage that has been in existence prior to the date of designation of the highway, is entitled to one access connection if no alternative access exists (see point 3 below). All such lots of record are entitled to a Residential access, a Farmstead access or a Field access connection.

2. Should MTO deem, for safety reasons, not to grant an access connection to a lot of record, and that access connection would provide the only means of access to the lot of record, MTO would be obligated to either:

   a. Provide an alternate means of access via the highway or an existing public road.

   or

   b. Purchase the lot of record. (The Regional Engineering Office, via its Property Section, would negotiate the amount of compensation with the property owner.)

3. A lot of record with highway frontage, which also has frontage on a public road, shall obtain its access connection from that public road. An access connection generally will not be permitted to the highway for lots of record with public road frontage unless:

   a. Internal access to the total holding is impractical due to topographical or physical constraints.

   or

   b. It can be demonstrated that access from the public road would be unsafe.
5.5.2 Grandfathering

Access connection grandfathering

All existing access connections to a highway or all existing access connections within MTO’s permit control areas (shown in Figure 3 and Figure 4), which have been legally in existence (either in accordance with a valid MTO entrance permit or as a recognized approved access connection) prior to the release of this guideline, are allowed to remain for their present land use unless changes to those entrances and municipal roads are being proposed or required as a result of land use development, municipal road upgrades, MTO Work Projects (which may involve closing of non-essential or unsafe access connections), etc. (For more information, refer to section 5.5.15.)

However, the policies and standards outlined in this guideline apply:

- to all new access connections
- when a change in use or upgrade of an existing access connection (e.g. Residential / Farmstead to Commercial) is being undertaken.

Where MTO has previously issued permits for new or modified entrances or for development within MTO’s permit control areas, the permits will be honoured.

Where MTO has endorsed development (e.g. site plan, plan of subdivision, etc.) such endorsement will be honoured and permits will be issued as soon as any outstanding details have been resolved.

Where MTO has endorsed planned development (e.g. Official Plans, Secondary Plans, Zoned Lands, etc.) such endorsement will be honoured. However, MTO will still need to comment on the adequacy of access management standards with respect to the implementation of roads and entrances to support the planned development.

Accordingly, early consideration of access management standards, when alternatives can reasonably be considered, will support efficient implementation of municipal planning objectives.
Controlled-access highways that are not freeways

In the late 1970s and early 1980s, MTO designated a significant number of non-freeway highways as controlled-access highways by Order-in-Council under the **PTHIA**. These controlled-access highways are typically 2 or 4 lane highways and their purpose is for mobility versus direct land access. Access connections to controlled-access highways are strictly controlled.

With the issuance of this guideline, the criteria that dealt with access control for these non-freeway controlled-access highways were revoked. However, each criteria contained an exemption clause that stated that any lot of record zoned commercial prior to the Order-in-Council designation date would be granted a commercial access.

In order to honour this exemption, MTO has implemented a grandfathering date for granting commercial access connections along controlled-access highways for a lot of record appropriately zoned commercial prior to January 1, 1980. The granting of a commercial access connection under the grandfathering date applies only to those properties located on a controlled-access highway that meet all of the following criteria:

- are designated controlled-access highway under the **PTHIA** by Order-in-Council
- are classified as either 2B – Arterial or 3 – Collector
- the property owner can prove to the satisfaction of MTO that the lot of record in question was zoned for commercial purposes prior to January 1, 1980
- no alternate means of access is available (e.g. access via municipal road)
- a commercial access can be accommodated in accordance with **Chapter 5** of this guideline

Should a dispute arise regarding the utilization of the grandfathering date, a property owner may request that MTO verify the actual Order-in-Council date to determine when the highway in question was designated as controlled-access.
Property owners who feel that their lot of record was zoned commercial subsequent to the grandfathering date but prior to the actual Order-in-Council date may request a review by MTO to determine when the highway was actually designated as controlled-access. Should MTO determine that a property owner’s lot of record was zoned commercial prior to the actual Order-in-Council date which designated the highway as controlled-access, that lot of record would be given consideration for a commercial access, provided the above criteria could be satisfied.

5.5.3 Infilling in built-up areas and planned expansion of the urban boundary

Infilling in built-up areas

1. Infilling refers to the creation of new lots of record, development of vacant lots of record or redevelopment of existing lots of record in built-up, urban areas (towns, villages, hamlets) where the pattern of development and the building line are well established. New access connections in built-up areas may be considered only where the posted speed is less than 70 km/h.

2. MTO will consider permitting a new access connection for residential purposes outside its normal access management policies and standards as outlined in this guideline in established built-up / urban areas, provided there are no adverse safety impacts. The minimum frontage requirement of 32 m may be reduced based upon MTO’s review of existing lot frontages and access density within the established built-up / urban area.

3. MTO will consider permitting a new access connection or upgrade / change in use of an existing access connection for commercial / private roads outside its normal access management policies and standards as outlined in this guideline in established urban / built-up areas provided there are no adverse safety impacts. The minimum frontage requirement of 32 m shall be met in all cases. MTO will determine appropriate density and spacing for commercial / private roads based on:

- pattern and density of commercial development within the urban / built-up area,

  and

- review of Traffic Impact Studies, where appropriate.
4. MTO will consider permitting a new access connection for a public road outside its normal access management policies and standards as outlined in this guideline in established urban / built-up areas provided there are no adverse safety impacts.

**Planned Expansion of the Urban Boundary**

5. MTO will recognize planned expansion that MTO has endorsed through the planning process (e.g. Official Plan).

6. The creation of new lots of record or other land use development which would extend the existing built-up / urban boundary area will not be considered by MTO unless MTO has endorsed such expansion through the planning process (e.g. Official Plan).

7. For both infilling and planned expansion, MTO will determine appropriate density and spacing for access connections based on:
   - pattern and density of development within the urban / built-up area,
   - review of Traffic Impact Studies, where appropriate.

**5.5.4 Checkerboard Plans**

1. Prior to the imposition of universal subdivision control in June 1970, reference plans and simultaneous conveyance were frequently used in the rural areas to subdivide land into conveyable lots, referred to as Checkerboard Plans.

2. There may be hundreds of Checkerboard Plans in Ontario and many of them are likely to be along provincial highways, with no other means of access connection.

3. MTO will not grant access connection to the provincial highway network for a lot of record created in this fashion, unless the property owner or municipality can demonstrate that MTO was consulted prior to the registration of the plan and has indicated a willingness to provide an individual access connection for the created lot of record.

4. MTO, in consultation with all affected property owners and the local municipality, should resolve the access connection issues created by Checkerboard Plans by attempting to create either a public or private road access.
5.5.5 First Nations

1. Under the PTHIA, MTO’s permit control area within a First Nation reserve is limited to the designated highway right-of-way itself. The extent of MTO’s permit control area is defined in the transfer document, which granted the highway to MTO.

2. Access management policies and standards as outlined in this guideline should be adhered to as much as possible for safety.

3. **Entrance permits** are required for all types of access connections along a highway within a First Nation reserve.

5.5.6 Crown Land

Crown Land is land under the administration and control of Her Majesty the Queen in right of the Province of Ontario or any agency thereof. Entrance permits are required from MTO for the construction or use of an access connection from the highway to Crown Lands.

For the purposes of this guideline, Crown Land is defined as lands under the jurisdiction and control of the Ministry of Natural Resources (MNR).

An access connection to Crown Land is a means of access from the highway for uses authorized by MNR, through instruments such as Sustainable Forest Licenses, Land Use Permits or other such authorizations issued by MNR. The access connection type will be directly related to the specific land use type. An MTO exitance permit will specifically state what the permitted means of access connection from the Crown Lands to the provincial highway are for, as well as the appropriate geometric design standards that it is to be constructed to.

5.5.7 Severance of a lot of record by natural physical feature

1. MTO will allow an access connection to the highway in situations where a **lot of record** is divided as a result of a naturally occurring physical feature (i.e. river course, municipal drain) and it is impractical or onerously expensive to build a structure internally to access that portion of the lot of record.
2. In such situations, MTO’s spacing, density and location standards will not apply, with the exception of the type of access connection. Commercial access connections will only be considered if permitted by the spacing, density and location standards. All other standards outlined in this guideline do apply.

3. Consent applications by property owners to sever the portion of lot of record divided by a naturally occurring physical feature will be granted access from the highway, provided point 2 above is satisfied and the lot of record in question has no other means of access to a public road.

5.5.8 Mutual access

A mutual access provides a means of access connection to the highway for two or more lots of record, which all have highway frontage. Typically, a mutual access is used where a direct highway access connection to two or more lots of record is unachievable due to topographical features (see Figure 18).

Because of potential conflicts and maintenance problems between property owners, mutual access connections are strictly controlled and only permitted if all of the requirements outlined in this section can be satisfied.

Figure 18: Mutual access
A mutual access connection request by way of a Consent Application will only be considered by MTO if all of the following are met:

- The Consent Application involves the creation of only one new lot, so that the mutual access services only the one new lot and the retained parcel. MTO will not grant a mutual access connection and associated entrance permit to service multiple new lots (2 or more).

- Both the severed and retained parcels shall have highway frontage following the consent.

- The criteria in Table 13 and Table 14 can be satisfied.

- The proposed mutual access involves an existing Residential, Farmstead or Commercial access connection, or the closure and relocation of an existing Residential, Farmstead or Commercial access connection to service the severed and retained parcels.

- The land uses of the severed and retained parcels are compatible (i.e. Residential and Farmstead, Commercial and Industrial).

MTO has produced a guide for the creation of mutual access connections. This guide contains various access connection easement scenarios, addresses the need for 0.3 m reserves and contains some procedural information. It is attached as Appendix A to this guideline.

The entrance permit for a mutual access will specifically state the permitted use of the access connection (i.e. Residential).

Only one entrance permit is issued for a mutual access. The entrance permit contains all applicable property owner names and is issued in duplicate – one to each property owner. The property owner who initiates the need for the entrance permit for a mutual access is responsible for making the permit application and paying the applicable entrance permit fee.

Mutual access connections shall meet the standards and requirements set out in section 5.5.8.
## How Decisions are Made About Permit Approval

### Table 13: Mutual Access Eligibility Criteria – Residential / Farmstead

<table>
<thead>
<tr>
<th>Access Management Classification System Category</th>
<th>Criteria 1</th>
<th>Criteria 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum Total Pre-Severance Frontage Requirement</td>
<td>AADT &lt;= 8000**</td>
</tr>
<tr>
<td>2A – Principal Arterial</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2B – Arterial</td>
<td>&gt;250 m</td>
<td>Permitted</td>
</tr>
<tr>
<td>3 – Collector</td>
<td>&gt;150 m</td>
<td>Permitted</td>
</tr>
<tr>
<td>4 – Local</td>
<td>&gt;125 m</td>
<td>Permitted</td>
</tr>
</tbody>
</table>

** AADT stands for Annual Average Daily Traffic

### Table 14: Mutual Access Eligibility Criteria – Commercial

<table>
<thead>
<tr>
<th>Access Management Classification System Category</th>
<th>Criteria 1</th>
<th>Criteria 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum Total Pre-Severance Frontage Requirement</td>
<td>AADT &lt;= 7000**</td>
</tr>
<tr>
<td>2A – Principal Arterial</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2B – Arterial</td>
<td>&gt;250 m</td>
<td>Permitted*</td>
</tr>
<tr>
<td>3 – Collector</td>
<td>&gt;150 m</td>
<td>Permitted*</td>
</tr>
<tr>
<td>4 – Local</td>
<td>&gt;125 m</td>
<td>Permitted*</td>
</tr>
</tbody>
</table>

* MTO reserves the right to request a Traffic Impact Study to determine the need for highway improvements.

** AADT stands for Annual Average Daily Traffic
5.5.9 0.3 m Reserves

Stakeholders are often required to convey to MTO a 0.3 m reserve along their highway frontage. A 0.3 m reserve serves to inform future property owners that an access connection from the highway is either not available or restricted to a certain location along the highway frontage.

5.5.10 Farmstead lot – multiple access connections

Farmstead lots which have an existing Farmstead access may also be eligible for Field or Auxiliary access connection(s), if internal access to the total holding is impractical due to either topographical features or other extenuating circumstances, and where the farmer can demonstrate a justifiable need for additional access(es) to the farmstead.

5.5.11 Temporary access

1. A Temporary access provides a means of access for a specific project, that is likely to last a relatively short period of time, and will ultimately be removed from the highway right-of-way. Typically a Temporary access is used to enable stakeholders and contractors to do work on their lot of record prior to the construction of a permanent access connection and where no other means of access is available.

2. A Temporary access permit shall clearly specify:

   • The expiry date (shall not exceed one year)

   • The extent and nature of the works to be undertaken on the lot of record

   • The property owner’s responsibility to remove the entrance and restore the highway right-of-way to MTO’s satisfaction

   • The property owner’s responsibility to clean up mud and debris from the highway in a timely fashion so as not to cause a hazard to the motoring public

3. Temporary access permits for logging operations shall coincide with MNR’s licence period or shall be issued for a period of up to two years.
4. A Letter of Credit or other means of financial security may be requested as a condition of issuance of a Temporary access permit, to cover MTO's cost for access removal and/or highway clean-up if not undertaken by the property owner.

5. Temporary access permits for MTO contractors are not required if the entrance is located within the contract limits of the project.

5.5.12 Emergency entrance

1. Emergency entrances provide access connection to major developments for emergency vehicles only. Typically, Emergency entrances are requested where only one means of access connection to the overall development is available and a municipality's emergency services are requesting a secondary means of access connection to the development.

2. As a general policy, MTO does not permit Emergency entrances onto provincial highways. However, MTO may consider exceptions provided:
   - it has been demonstrated that there is no reasonable alternative to provide adequate emergency access elsewhere
   - a safe location can be identified
   - it will be owned and maintained by the municipality
   - the design of the Emergency entrance discourages / prohibits non-emergency use
   - the municipality will ensure that emergency status is maintained over the long-term

3. MTO will not be restricting emergency access connections onto municipal streets within its permit control area, provided they are placed at locations which will not affect the safe operation of the highway.

4. The MTO’s Regional Manager of Engineering and/or the Manager of Operational Services shall approve any exceptions to the above.
5.5.13 Access for condominiums

1. A condominium development requires a private road entrance permit.

2. Only one access connection is permitted and only one entrance permit is required for a condominium development regardless of the number of units involved. The entrance permit will be issued to the condominium corporation.

5.5.14 Access to public roads near provincial highway intersections

1. Where a proposed access connection onto a public road falls within MTO’s permit control area (Figure 3 and Figure 4) as specified under the PTHIA, MTO will require that a Building and Land Use permit be obtained.

2. Should the location of the access connection not meet with MTO’s standards as indicated in this guideline or, in the opinion of MTO, the access connection would affect the safety and proper operation of the intersection, MTO will deny a Building and Land Use permit.

3. MTO, municipalities and stakeholders need to work cooperatively to ensure that intersections function and operate both safely and efficiently.

5.5.15 MTO Work Projects - Closing of illegal, non-essential or unsafe access connections

Through the normal course of MTO Work Projects, MTO will remove all illegal access connections. MTO will also attempt to remove all non-essential and unsafe access connections to the provincial highway network, and reconstruct access connections to current design standards. In these cases, consultation with the property owner will be required.

The cost for removal of non-essential access connections or the reconstruction of an access connection to current design standards, when identified through the course of an MTO Work Project, is the financial responsibility of MTO.
How Decisions are Made About Permit Approval

Through the normal course of an MTO Work Project, MTO will review all access connection locations to:

a. determine whether the lot of record has exceeded the permissible number of access connections allowed under this guideline (i.e. First Principle – One Lot = One Access Connection)

b. review the access design for the lot of record to determine if it meets the design standards of MTO for the current land use

MTO will consult with the affected property owner if it becomes necessary to remove or redesign an access connection. Should MTO deem it necessary to close an access connection for safety reasons as part of an MTO Work Project, and that access connection provides the only means of access to the lot of record, MTO is obligated to either:

a. provide an alternate means of access via the highway or an existing public road,

or

b. purchase the affected lot of record.

In the latter case, MTO’s Regional Engineering Office, via its Property Section, will negotiate the amount of compensation with the property owner.

5.5.16 Home occupation or industry

1. Most municipalities through their Official Plan and/or Comprehensive Zoning By-law permit property owners to operate home occupations and small-scale home industries that are compatible with neighbouring uses and as a secondary use to the main permitted land use (zoning) of the lot of record.

2. Municipal Official Plan and/or Comprehensive Zoning By-law typically regulate the details of home occupations and home industry uses.

3. A property owner intending on opening a home occupation or home industry located along a provincial highway should ensure that the requirements of MTO can be met concerning entrance and sign approval prior to initiating the business.
4. Some home occupations and home industries can generate significant traffic volumes and, depending on the Access Management Classification of the highway and/or the HAMP for the highway corridor, a change in use of the existing highway access connection (e.g. commercial entrance) may not be permitted by MTO.

5. Figure 19 illustrates an application for a Property Owner Acknowledgement – Home Occupation / Home Industry which is attached to an Entrance Permit.
Figure 19: Property Owner Acknowledgement – Home Occupation / Home Industry

<table>
<thead>
<tr>
<th>Ministry of Transportation (MTO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Owner Acknowledgement - Home Occupation and Home Industry</td>
</tr>
<tr>
<td>(To Be Attached To An Entrance Permit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Owner:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address &amp; Phone Number:</td>
<td></td>
</tr>
<tr>
<td>Municipality:</td>
<td></td>
</tr>
<tr>
<td>Highway Number:</td>
<td>Existing Entrance Permit Number:</td>
</tr>
<tr>
<td>Primary Land Use (Zoning):</td>
<td></td>
</tr>
<tr>
<td>Secondary Land Use (Home Occupation / Home Industry):</td>
<td></td>
</tr>
</tbody>
</table>

MTO acknowledges the use of a small portion of the property owner's land for conducting as a Home Occupation / Home Industry and accordingly approves the use of the entrance for this secondary land use.

MTO hereby permits one sign not exceeding 2 square metres or two signs not exceeding a combined area of three square metres to be located on the property owner's land, to identify the Home Occupation / Industry business.

<table>
<thead>
<tr>
<th>Ministry of Transportation Representative</th>
<th>Date</th>
</tr>
</thead>
</table>

I, the Property Owner of the above noted property, hereby acknowledges the following:

1. I am aware that the Home Occupation / Home Industry business on my property is permitted on the understanding that it will not create a traffic hazard, will not interfere with the proper operation of the highway and will continue to be a secondary land use to the primary land use (zoning) on my property.

2. I am aware that my property does not meet the MTO requirements for a commercial access to the highway and I understand that conversion of my existing entrance to a commercial access shall NOT be permitted.

3. I am aware that MTO would not support a future severance to separate the Home Occupation / Home Industry business from my property and therefore would not issue a new entrance permit from the highway for a new lot of record.

<table>
<thead>
<tr>
<th>Property Owner</th>
<th>Date</th>
</tr>
</thead>
</table>

The municipality of has been advised and is aware of MTO’s position regarding the use of the entrance to this property.

<table>
<thead>
<tr>
<th>Municipal Representative (i.e. Clerk, CAO)</th>
<th>Date</th>
</tr>
</thead>
</table>
6. If MTO’s Corridor Management Office Turns Down a Permit Application

6.1 Variance or appeal process

If your permit is declined by an MTO’s Corridor Management Office, an appeal can be made to the appropriate Regional Director. The Regional Director will advise the stakeholder of the decision in writing.

Although the PTHIA does not provide for a variance or appeals process, MTO has developed a procedure with decision timelines and submission / documentation requirements.

6.2 About the Variance / Appeal Process

The Regional Director can review a stakeholder request for variance or appeal for permits that has been declined by an MTO Corridor Management Office.

The Regional Director’s decision will take into consideration the impact the variance / appeal will have on the safety, integrity and sustainability of the provincial highway network.

6.3 How to request a variance or appeal from the Regional Director

To request a variance or appeal, submit a written request to the applicable Regional Director in your area (For the Regional Director closest to you refer to section 4.1) and include the following:

- Summary of the situation.
If MTO's Corridor Management Office Turns Down a Permit Application

- MTO access management policy or standard that is being appealed or variance sought.
- Rationale for not complying with MTO's policy or standard.
- Rationale for why approval of the variance or appeal would not negatively impact highway safety, capacity or operating speeds, or alternatively, how such impacts could be mitigated at the stakeholder’s cost.
- Basic information (location and vicinity map, size / type of development, site plans, current / proposed land use designation, etc.)
- Background correspondence and studies (i.e. traffic impact study).
- Letter from the local municipality, indicating whether the municipality supports approval of the variance or appeal, including any municipal terms or conditions.

6.4 What the Regional Director does with the appeal

The Regional Director will review the submission, clarify any points with the stakeholder, meet with the stakeholder if necessary and advise the stakeholder of any further information requirements.

The Regional Director can utilize what is known as the Corridor Management Variance Committee to provide a recommendation on the merits of the variance or appeal. The Corridor Management Variance Committee is made up of the following MTO staff or their designees:

- Five (5) Regional Heads of Corridor Management
- Head, Corridor Management and Property Section
- Senior Planner & Policy Advisor, Corridor Management and Property Section
- Manager of Engineering (Highway Standards Team Ex-Officio)
The Corridor Management Variance Committee may request other MTO staff to appear before the Committee to provide information on the variance request. In addition, the Corridor Management Variance Committee may require, for example, an independent 3rd party review to be undertaken for the variance or appeal. Should additional costs for external reviews or studies be required by MTO, the stakeholder will be required to fund the cost in order for the variance or appeal to proceed.

The mandate of the Corridor Management Variance Committee is to consider requests for variances or appeals of MTO’s access management policies and standards. The goal of the Corridor Management Variance Committee is to make a fair, unbiased, transparent and timely recommendation to the Regional Director, taking into consideration the role and function of the particular highway as well as the goals and principles outlined in this guideline.

Although the Corridor Management Variance Committee only provides recommendations regarding proposed variances / appeals, the Corridor Management Variance Committee’s recommendation is required by the Regional Director, in order to consider approval of any variance / appeal that does not meet MTO standards or sets significant precedence. The Regional Director’s decision will take into consideration the recommendation of the Corridor Management Variance Committee as well as the impact the variance / appeal will have on the safety, integrity and sustainability of the provincial highway network.

Once the Regional Director makes their decision, they will advise the stakeholder of their decision, in writing, with the reasons for any conditions of approval, deferral or denial.

6.5 If a stakeholder is dissatisfied with the Regional Committee’s decision

If a stakeholder is dissatisfied with the decision of the Regional Director, they may submit an appeal in writing to the Director, Contract Management and Operations Branch, outlining why they disagree with the decision. (The contact information is on the cover of this guideline.) The stakeholder shall submit a certified cheque for $1000.00, payable to the Minister of Finance, to cover MTO’s cost for further review of the variance or appeal.
If MTO’s Corridor Management Office Turns Down a Permit Application

The Director, Contract Management and Operations Branch will review the decision of the Regional Director and decide whether to consider the appeal. If the appeal is denied, the Director, Contract Management and Operations Branch will advise the stakeholder in writing with the reasons for the denial. In this case, the stakeholder will not be eligible for a refund of the $1000.00 review fee.

If the appeal is to be considered, the Director, Contract Management and Operations Branch will instruct the Manager, Operations Office to review the matter in detail and provide a report and recommendation. The Manager, Operations Office may request additional information from the stakeholder or Regional Director and may meet with them if necessary.

The Director, Contract Management and Operations Branch will review the report and recommendation of the Manager, Operations Office and will advise the stakeholder and the Regional Director in writing of the final technical staff decision, along with the reasons for the decision.

A stakeholder who receives a decision in their favour will be refunded their $1000.00 review fee. A stakeholder who does not receive a decision in their favour will not be refunded their $1000.00 review fee.
7. About HAMPs and I-HAMPs

7.1 What are HAMPs and I-HAMPs?

Highway Access Management Plans (HAMPs) are comprehensive “master plans” for managing access to all or part of a provincial highway corridor. Interchange Highway Access Management Plans (I-HAMPs) are comprehensive “master plans” for managing access at an interchange on a provincial highway.

HAMPs and I-HAMPs aim to achieve the optimum balance between transportation and planning objectives and preservation of the current and future function of the highway. Once a HAMP or I-HAMP has been published, permit applications that are in full compliance should be issued without complication, provided all site-specific matters for the development of the lot of record have been satisfied.

For new highways, a HAMP and/or I-HAMP will be developed as part of the overall planning process. HAMPs and I-HAMPs detail MTO’s requirements for permitting access connections along the highway and intersecting public roads.

In some situations, a HAMP or I-HAMP may not be necessary to manage access connections. MTO will work cooperatively with municipalities/developers/property owners to determine appropriate intersection spacing and other roadway characteristics where needed in urbanized areas and emerging growth nodes of the province to support intensification and more compact development within communities.

For many municipalities in the Greater Golden Horseshoe area, the development of I-HAMPs will be the likely starting point by which access management is addressed at interchanges. In addition, the development of I-HAMPs could potentially be the starting point in other high density urbanized areas and emerging growth nodes of the province where freeways exist.
7.2 What is the purpose of HAMPs and I-HAMPs?

The purpose of HAMPs and I-HAMPs is:

- to act as an “access management master plan” that co-ordinates highway access management and adjacent road/land development on a strategic rather than reactive basis

- to provide the opportunity to reduce future potential conflicts between provincial highway access management objectives (policies/standards) and municipal land use objectives (road/land development plans), so that both objectives are efficiently achieved

- to provide MTO, municipalities and stakeholders with an orderly technical process to evaluate, and hopefully resolve, situations where development plans appear to be unable to comply with access management policies/standards.

- to provide a study process that is equivalent and complementary to that of applying the standards contained in Chapter 5.

7.3 What benefits do HAMPs and I-HAMPs offer municipalities?

The benefits of HAMPs and I-HAMPs include:

- HAMPs and I-HAMPs reduce the incidence of “last-in pays all”. This happens when previous development contributed to the overall need for work associated with access management, but the “last-in” finally triggers the access management work and has to pay all expenses.

- HAMPs and I-HAMPs support the development charges bylaw process by capturing expenditures related to access management in advance. This enables municipalities to collect development charges earlier in the land use development cycle and it spreads the costs equitably across multiple developments according to their fair share.

- Supports the “user-pay” principle

- Reduces unwarranted demands on municipal general revenues and MTO
• HAMPs and I-HAMPs reduce the administrative overhead that would otherwise be incurred by evaluating a series of individual development proposals one at a time.

7.4 Three ways to trigger HAMPs and I-HAMPs

The creation of a HAMP or I-HAMP may be triggered three ways:

• As a component of broader government transportation initiatives or municipal land use planning initiatives

• As a reaction to significant pressures or conflicts associated with municipal land use planning and access management

• As a reaction to specific land development proposals

Each of these triggers is explained in more detail below.

**Trigger 1 - As a component of broader government transportation or municipal land use planning initiative**

Trigger 1 includes:

• MTO transportation planning initiatives:
  o provincial transportation planning or environmental assessment (EA) studies
  o provincial highway design studies (preliminary or detailed)

• Municipal planning and transportation initiatives:
  o Official Plan updates, Secondary Plans, etc.
  o Master Transportation Plans, including transit**
  o area transportation plans**
  o municipal road preliminary design studies
• Provincial or municipal transit and related infrastructure initiatives that are important to the more efficient and sustainable operation of the highway such as:
  o transit stations
  o park and ride facilities
  o carpool parking lots.

• Permit authority of PTHIA:
  o draft plans of subdivisions
  o amendments to official plans or zoning bylaws
  o Consents, site plans, etc.

(**may require preliminary design study for the highway or interchange)

*Trigger 2 - As a reaction to significant pressures or conflicts associated with municipal land use planning and access management*

Trigger 2 includes situations where:

• the pressure of a high number of municipal land use planning applications and MTO permit applications results in MTO being “reactive vs. proactive”

• conflicts are arising because municipalities and stakeholders demand application of access management standards “at or below” minimum standards

• ongoing anticipated pressures and conflicts are resulting from municipally “approved” changes in land use designations and/or significant increase in transportation demand and strategic planning has a high potential of achieving access management “desirable” standards

*Trigger 3 - As a reaction to specific land development proposals*

Trigger 3 includes:

• HAMPs and I-HAMPs are generally not required if it appears that access management “desirable” standards will be achieved.
• HAMPs and I-HAMPs *should be considered* if it appears that only access management “minimum” standards will be achieved for a corridor or interchange. Under these circumstances, the goal is to identify design alternatives that are closer to “desirable” standards, but not below the minimum standards, where achievable.

• HAMPs and I-HAMPs *shall be actively pursued* if it appears that access management “minimum” standards will not be achieved. Under these circumstances, the goal is to develop design alternatives that, at the very least, meet access management “minimum” standards. Otherwise, it is a strong possibility that MTO will deny the permit.

7.5 Principles for HAMP and I-HAMP studies

*Principle #1*

Inter-regional transportation on the provincial highway network is a critical component of the overall provincial economy. As a result, policy requires that transportation corridors be protected.

Access management standards are designed to meet this obligation within the context of 21st century land use planning objectives/patterns and transportation planning objectives/characteristics.

Accordingly, the considerations for developing a HAMP or I-HAMP are, in order of precedence:

• The first consideration is to protect the safety and capacity of the inter-regional movement of people and goods on provincial highway corridors and associated intersections and interchanges.

• The second consideration is to minimize:
  
  o The travel time through interchanges for inter-regional and municipal transit.
  
  o The time spent by bus operators serving highway-oriented transit and related facilities.
The third consideration is to protect the safety and capacity of local traffic on municipal roads in the vicinity of their connection to the provincial highway network.

The fourth consideration is to achieve provincial and municipal land development policy objectives on lands in the vicinity of provincial highway corridors and associated intersections or interchanges (e.g. orderly development intensification). For example, to preserve, where applicable, safe and convenient access by transit users walking or cycling to and from transit stops and key local destinations, such as schools, retail uses, workplaces, residential areas, hospitals, community centres, government offices, libraries, etc.

The fifth consideration is to achieve land development objectives of individual stakeholders.

**Principle #2**

In general, there are more alternatives and greater flexibility in the planning of land use development and municipal roads, than there are in protecting and providing inter-regional transportation capacity on the provincial highway network.

Accordingly, where on a preliminary basis it appears that land use development proposals do not comply with access management standards, alternatives shall be developed and include:

- Municipal road or inter-regional and municipal transit planning alternatives, such as:
  - New or improved municipal roads and intersections, including service roads
  - New or improved municipal road connections to provide a single point of access to a number of local developments
  - New or improved inter-regional and municipal transit routing and facilities
  - Innovative alternatives (e.g. grade separations, roundabouts, etc.)
• Land use development planning alternatives which avoid or minimize the need for direct highway access, such as:
  o adequate internal road system
  o access points away from the highway

• Consideration of extending/providing the above alternatives beyond MTO’s permit control area of the PTHIA, as a means of accommodating land use development proposals with MTO’s permit control areas.

Principle #3

HAMPs and I-HAMPs are not a mechanism to compromise access management standards, and should therefore result in a good access management product.

Accordingly, the overall access management study process for selecting a HAMP or I-HAMP alternative(s) should consider, evaluate and document all of the following:

• desirable and minimum standards contained in Figure 11, Figure 12, Figure 13, Figure 14, Figure 15 and Figure 16.

• viable design alternatives beyond the desirable and minimum spacing and offset standards contained in the Figures noted above.

• innovative design approaches, where appropriate, such as comprehensive, broader-based land use planning/design and transportation planning/design alternatives that look towards meeting access management objectives while still meeting land use development objectives.

Principle #4

In developing HAMPs and I-HAMPs, municipal policy, statute, permits/approvals, etc. cannot override provincial access management policies and standards.

Principle #5

HAMPs and I-HAMPs require a Traffic Impact Study to support planning decisions. In complex situations, such a study will have to be very comprehensive.
MTO is particularly interested in the study’s recommendations with respect to:

- left turns from a provincial highway onto a public road or commercial / private road
- downstream left turns (left turns available after motorists exit the highway) on public roads or commercial / private roads that are in close proximity to MTO intersections or interchange ramp terminals.

**Principle #6**

HAMPs and I-HAMPs require both time and financial resources. Where:

- Municipalities and stakeholders are the catalyst for justifying the need for a HAMP or I-HAMP, they need to ensure their schedules and funding accommodate their development.
- MTO is the catalyst for justifying the need for a HAMP and I-HAMP, it will ensure its schedules accommodate their development, including funding.
- There is a joint benefit to MTO, municipalities and stakeholders to develop a HAMP or I-HAMP, all parties need to ensure their schedules and funding (cost-sharing) accommodate their development.

**Principle #7**

It is in the interest of stakeholders to undertake the early stages of their planning with the intent of complying with access management standards and avoid the need for HAMPs and I-HAMPs to resolve problems. Planning that complies with access management standards may, in the end, be less complex and costly than delays and redesigns resulting from initial non-compliance.
7.6 Key components of HAMPs and I-HAMPs

At a minimum, HAMPs and I-HAMPs should identify the following:

- **Provincial Highway Corridor itself, including**
  - Functional Classification and Access Management
    - Classification of the provincial highway corridor
  - location of all existing interchanges/intersections
  - location of any proposed interchanges/intersections
  - location of any proposed road realignments or closures

- **Public Roads and Transit**
  - location of existing/proposed municipal road network in the vicinity of the highway corridor to support land use growth (offset spacing from highway interchanges/intersections)
  - location of existing and proposed inter-regional and municipal transit routes and facilities and carpool lots

- **Commercial/Private Roads**
  - location of commercial/private road entrances
  - location of any proposed commercial/private road entrances
  - location of any proposed commercial/private road closures
  - location of existing/proposed commercial/private roads in the vicinity of the highway corridor to support land use growth (offset spacing from highway interchanges/intersections)

- **Private Access Connections (e.g. residential, farmstead, etc.)**
  - location of private entrances
  - location of any proposed private entrances
  - location of any proposed private entrance closures
  - location of existing/proposed private access connections in the vicinity of the highway corridor to support land use growth (offset spacing from highway interchanges/intersections)
In the development of a HAMP or I-HAMP, the following should be reviewed and analyzed:

- spacing between interchanges/intersections/entrances along highway
- offset spacing from highway to first intersection/entrance on public crossing road
- interchange / intersection functional areas and schematics for compliance with access management standards
- proposed interchanges/intersections/entrances along highway and on public crossing roads
- municipal planning documents (Official Plan, Master Transportation Plan, etc.), broader government policy (Provincial Policy Statement) and MTO transportation planning objectives (MTO Work Projects).
- location of existing and proposed inter-regional and municipal transit routes and facilities
- traffic impact study(s), to support existing and future land use planning decisions for the above

7.7 Funding responsibilities for HAMPs and I-HAMPs

**When is the municipality or stakeholder responsible for funding?**

In general, the *municipality* has the funding responsibility where a HAMP or I-HAMP is triggered as a component of a “municipal land use planning initiative” or a “municipal transportation planning initiative”.

In general, the *stakeholder* has the funding responsibility where a HAMP or I-HAMP is triggered in response to a specific development proposal, particularly where development plans appear to be unable to comply with access management standards.

For combinations of the above, shared municipal/stakeholder funding responsibility may be proportionate to the respective trigger.

**When is MTO responsible for funding?**

In general, *MTO* has funding responsibility where a HAMP or I-HAMP is triggered as a component of an “MTO transportation planning initiative”.
It is unlikely that MTO would be a funding participant in a HAMP or I-HAMP triggered in response to a “municipal land use or transportation planning initiative” unless there is a joint benefit to MTO and the municipality in achieving their respective transportation objectives. Any such MTO funding participation would be subject to availability and approval of funding.

It is unlikely that MTO would be a funding participant in a HAMP or I-HAMP triggered in response to a “stakeholder development initiative” unless there is a benefit to MTO in achieving its transportation objectives. Any such MTO funding participation would be subject to availability and approval of funding.

**When is funding handled jointly by the municipality and MTO?**

Municipalities and MTO may consider joint funding responsibility where a HAMP or I-HAMP is triggered in reaction to:

- current ongoing pressures or conflicts associated with a high number of municipal land use planning applications and MTO permit applications
- anticipated ongoing pressures/conflicts resulting from municipal “approved” changes in land use designations and/or significant increase in transportation demand
- concurrent Municipal and MTO planning and design studies with adjacent / overlapping study areas (e.g. which overlap at interchanges or intersections)

Municipal / MTO cost-sharing (funding responsibility) may be proportionate to the respective trigger. Any such MTO funding participation would be “subject to availability and approval of funding”.
7.8 Management of HAMP and I-HAMP studies

Although HAMPs and I-HAMPs may be triggered by municipal or stakeholder initiatives, they are to be overseen and approved by MTO. HAMPs and I-HAMPs should include an up-front plan for technical work and consultation including identification of a study area. For provincial/municipal transportation planning and design studies, this may be part of the broader EA study process.

Where the municipality and/or stakeholder has the sole or primary funding responsibility, they will be responsible (pursuant to MTO review and approval) for developing the up-front plan for technical work and consultation, carrying out the study work, and making necessary modifications to the study.

7.9 Participants in HAMP and I-HAMP studies

Potential HAMP and I-HAMP participants:

Shall include:

- MTO participants
  - Regional Corridor Control/Management staff
  - Regional Planning and Design staff
  - Regional Traffic staff

- Municipal participants
  - Planning staff
  - Transportation/Engineering staff

May include:

- **Property owners**, developers and agencies, community groups, etc., (if applicable)
- Owners of all properties within the HAMP or I-HAMP study area
About HAMPs and I-HAMPs

- Inter-Regional and Municipal Transit providers
- Major area transportation service providers (trucking, emergency services etc.)

7.10 Adoption, publishing and modification of HAMPs and I-HAMPs

After a HAMP or I-HAMP is approved and adopted by MTO, it is to be published for use by MTO, the municipality and all stakeholders.

Where permit applications are fully in compliance with published HAMPs and I-HAMPs, MTO permits should be issued without complication, provided:

- All associated HAMP and I-HAMP requirements have been addressed
- All matters for the development of the site meet MTO requirements (e.g. building setbacks, stormwater management, signs, etc.)

Where modifications to published HAMPs or I-HAMPs are proposed, the affected municipality and stakeholders shall be consulted and an amended HAMP or I-HAMP published, if appropriate. Where the HAMP or I-HAMP is a component of an EA study, the appropriate EA addendum process shall apply.
8. Types of Access Connections

8.1 Purpose of Access

All MTO entrance permits have a “Purpose of Access” heading, which specifies the type of access allowed for the lot of record. Any change in the “Purpose of Access” from that stated on the entrance permit is in contravention of the permit. MTO in consultation with the property owner would attempt to resolve the situation. If no agreement is reached, MTO has grounds to cancel the entrance permit and remove the access connection from the highway.

The “Purpose of Access” will typically name one of the following types of access connections:

8.2 Interchange

An Interchange is the intersection of a provincial highway or public road with a freeway, staged freeway or principal arterial under the authority of the Province of Ontario.

8.3 Public road

For the purposes of this guideline, a public road is a road on which public money has been expended for its repair or maintenance and is either:

- a road established by by-law and under the jurisdiction of a municipality or joint jurisdiction of two or more municipalities, which intersects with a provincial highway, or
• a road in territory without municipal organization, where MTO may arrange with the Government of Canada, the local roads board elected under the *Local Roads Boards Act*, the roads commissioners elected under the *Statute Labour Act*, or other duly constituted road authority, for the construction or maintenance of a road, which intersects with a provincial highway, or

• a road in a First Nation, where MTO may arrange with the Government of Canada or the First Nation for the construction or maintenance of a road, which intersects with a provincial highway.

### 8.4 Private road

For the purposes of this guideline, a private road is a road that:

• is under the jurisdiction and control of a person, an authority, a corporation, an association, etc. who is the owner of the land or lands that the private road provides access

• intersects with a provincial highway

• public funds are not expended upon

There are several types of private roads. The following are some examples:

• Those that access condominium developments

• Those that access major commercial or industrial developments involving two or more buildings, and that typically require highway improvements (i.e. turning lanes, traffic signals, etc.)

• Those that access public facilities (i.e. landfill sites, provincial parks, public institutions, etc.)

• Those that access private recreational facilities (i.e. a private resort, etc.)

• Those that access cottages and lakefront properties (i.e. an unassumed road)
Types of Access Connections

There are many historical private roads in Ontario that access cottages and lakefront properties that do not meet minimum design and safety requirements. MTO, municipalities and affected property owners should work cooperatively with respect to upgrading these private roads to current design and safety standards prior to the creation of any new lots of record or other land-use development that would need to utilize them. In some instances, the municipality should consider assuming the private road.

8.5 Service road

A Service Road (or frontage road) is typically located parallel and adjacent to a freeway, staged freeway or arterial in order to provide access to adjacent properties. A Service Road could either be under the jurisdiction of MTO or a municipality.

All properties with frontage along the Service Road shall gain access from it. Entrances onto the highway shall be removed and relocated onto the Service Road. The width of a Service Road right-of-way shall be a minimum of 20 m.

All land use development along a service road that falls within MTO’s permit control area (Figure 3 and Figure 4) as defined in the PTHIA requires MTO approval.

Where MTO is protecting for a future Service Road, typically 20 m will be added to the standard setback requirements outlined in the Building and Land Use chapter of MTO’s Corridor Control and Permit Procedures Manual. Note that a HAMP or I-HAMP may require a right-of-way wider than 20 m for a Service Road.

8.6 Commercial access

A Commercial access is the means of private access connection to a highway from a parcel of land serving a commercial / industrial / institutional / multi-residential development. Typically, a Commercial access is required whenever the zoning for the lot of record is representative of a commercial / industrial / institutional / multi-residential land use.
8.7 Farmstead access

A Farmstead access is the means of access connection to the highway from a farm residence. The access connection design typically should be adequate to accommodate farm machinery and truck movements.

8.8 Field access

A Field access is the means of access connection to the highway from a vacant lot of record or for auxiliary access for a Farmstead lot. In the case of the Field access connection being required for agricultural purposes, the access connection design typically should be adequate to accommodate farm machinery and truck movements.

8.9 Auxiliary access

An Auxiliary access is a secondary means of access connection to the highway, which is already served by another access connection type. Typically it is used where internal access to the total holding is impractical due to topographical or physical features (e.g. creek, municipal drain, etc.)

8.10 Residential access

A Residential access is the means of access connection to the highway from a residential lot.

8.11 Mutual access

A Mutual access provides a means of access connection to the highway for two or more lots of record, which all have highway frontage. Typically, a Mutual access is used where a direct highway access connection to two or more lots of record is unachievable due to topographical features.

A Mutual access connection request by a stakeholder as part of a Consent application is outlined in Chapter 5 of this Guideline.
8.12 Utility access

A Utility access is the means of access connection to a highway from a utility installation such as a microwave tower, power or telecommunication company substation, municipal utility pumping station, or any other public utility belonging to a municipal corporation, commission, or company operating under a Federal, Provincial or Municipal franchise to provide a public service.

8.13 Resource access

A Resource access provides a means of access connection for logging operations, mining exploration, gravel pit, etc.

8.14 Temporary access

A Temporary access provides a means of access connection for a specific project, which will last a relatively short period of time, and will ultimately be removed from the highway right-of-way. Typically, a Temporary access is used to enable stakeholders and contractors to do work on their lot of record prior to the construction of a permanent access connection and where no other means of access connection is available.
9. Highway Designation and MTO Classification Systems

9.1 Designation of a highway

Provincial highways and proposed provincial highways are designated under the PTHIA as one of the following:

- King’s Highway (section 7)
- controlled-access highway (section 36)

In addition, MTO can also designate highways as:

- secondary highway (section 40)
- tertiary road (section 41)
- resource road (section 42)

(The above three designated highways will be considered King’s Highways in this guideline.)

The type of designation determines the extent and degree of the provisions and regulations of the PTHIA that apply.

MTO uses the Functional Classification system as its foundation for highway network planning, engineering and other classification systems.
9.2 Classification Systems

9.2.1 Functional Classification System

MTO uses the Functional Classification system as its foundation for highway network planning, engineering and other classification systems.

*Figure 20* (Southern Ontario) and *Figure 21* (Northern Ontario) illustrate the Functional Classification system for the Province of Ontario’s Highway Network.

9.2.2 Access Management Classification System

The Access Management Classification system, and the policies and standards within this guideline, protect the Functional Classification system by preserving the intended role, function, mobility and design characteristics of each provincial highway. *Figure 5* (Southern Ontario) and *Figure 6* (Northern Ontario) illustrate the Access Management Classification system for the Province of Ontario’s highway network.

For access management purposes, MTO has classified Ontario’s provincial highways into the following categories (*Table 15*) based on the Functional Classification system:

*Table 15: Access Management Classification System*

<table>
<thead>
<tr>
<th>Access Management Classification System Category</th>
<th>Controlled-access Highway (CAH) or King’s Highway (KH)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A – Freeway</td>
<td>Fully CAH</td>
</tr>
<tr>
<td>1B – Staged Freeway</td>
<td>Fully CAH</td>
</tr>
<tr>
<td>2A – Principal Arterial</td>
<td>Fully CAH</td>
</tr>
<tr>
<td>2B – Arterial</td>
<td>CAH or KH</td>
</tr>
<tr>
<td>3 - Collector</td>
<td>KH</td>
</tr>
<tr>
<td>4 - Local</td>
<td>KH</td>
</tr>
</tbody>
</table>

On *Figure 5* and *Figure 6*, the Access Management Classification within urban and built-up areas is the same as the adjacent sections of the highway. However, these areas are addressed separately in section 5.5.3 of this guideline.
9.3 Access Management Classification System - Definitions

Outlined below are descriptions of each of the Access Management Classification system categories. In addition, the descriptions include the role, function, mobility and design characteristics of each category based on the Functional Classification system.

9.3.1 Freeways

Freeway corridors are built to accommodate the movement of large volumes of traffic at high speeds under free-flow conditions. The need for unrestricted traffic movement on these facilities justifies the elimination of all direct lot of record access connections. Traffic flow should be uninterrupted and unrestricted. Opposing traffic lanes shall be separated.

Access connections to be located along a public road within 800 m of an interchange ramp terminal intersection are subject to MTO’s permit control area (Figure 4) and may require a Building and Land Use Permit.

Adequate spacing, design and location of access connections along a public road either upstream or downstream of freeway ramps avoids traffic backups onto the mainline and preserves safe and efficient traffic operation in the vicinity of the ramp terminals and the intersecting public road.

Private access connections are prohibited.

The spacing, density and location for all access connection types in the vicinity of an interchange are to be in accordance with this guideline.

9.3.2 1A – Freeway (Fully controlled-access highway)

1A - Freeway corridors have full control of access connections, with access provided via grade-separated interchanges only.

9.3.3 1B - Staged Freeway (Fully controlled-access highway)

1B - Staged Freeway corridors are projected to become Freeways at some time in the future.
Staged Freeway corridors have full control of access connections, with access provided via public road connections only at approved locations for future grade-separated interchanges.

Public roads that are permitted to remain during the initial construction of a Staged Freeway will either be closed, become grade-separated crossings or become interchanges when constructed as a Freeway. Existing private access connections to Staged Freeways may remain on a temporary basis. These access connections shall be removed when the highway is upgraded to Freeway status or when there are operational problems. A change in use of an existing private access connection related to a change in land use is prohibited.

9.3.4 Arterials

The role of Arterial corridors is to provide mobility. In areas where Freeways are not warranted, Arterials are the highest type of highway.

Arterials are typically 2 or 4 lane divided or undivided highways with at-grade intersections, which could potentially have short sections of Freeway or Staged Freeway constructed within the overall corridor.

Access connections to be located along a public road within 800 m of an interchange ramp terminal intersection or an at-grade intersection, are subject to MTO’s permit control area (Figure 3 and Figure 4) and may require a Building and Land Use Permit.

All access connection types will be reviewed during MTO Work Projects for potential removal, relocation or consolidation in order to protect the role, function and mobility of the corridor as an Arterial.

All private access connection types for existing lots of record will be permitted to remain for existing land use.

9.3.5 2A – Principal Arterial (Fully Controlled-access)

Fully controlled-access Principal Arterial corridors have full control of access connections, with access provided via public road connections only at approved locations for:

- future grade-separated interchanges or
- future at-grade public road intersections.

All other access connection types are prohibited.
9.3.6 2B – Arterial (Controlled-access or King’s Highway)

Controlled-access or King’s Highway Arterial corridors have extensive control of access connections.

Access for development of land (i.e. subdivisions) shall be from existing public roads or via a new public road connection at an approved location.

New private access connections or upgrading of an existing access connection (i.e. Residential access to Commercial access) for a land use change, which meets the desirable / minimum spacing, density, frontage and safety requirements outlined in this guideline will be considered.

9.3.7 3 – Collector (King’s Highway)

The role of Collector corridors is to provide a balance between mobility and access. However, access is still secondary to mobility. Collectors typically are 2 or 4 lane undivided highways with at-grade intersections. Collector corridors have substantial control of access.

Access for development of land (i.e. subdivisions) is to be from existing public roads or via a new public road connection at an approved location.

All private access connections for existing lots of record will be permitted to remain. New private access connections are permitted, but they should be from existing public roads where possible. Upgrading of an existing access connection (i.e. Residential access to Commercial access) for a land use change will be considered, if the upgrade meets the minimum spacing, density, frontage and safety requirements outlined in this guideline.

All access connections will be reviewed during MTO Work Projects for potential removal, relocation or consolidation in order to protect the role, function and mobility of the corridor as a Collector.

Access connections to be located along a public road within 800 m of an at-grade intersection are subject to MTO’s permit control area (Figure 3) and may require a Building and Land Use Permit.
9.3.8 4 – Local (King’s Highway)

A Local corridor’s role is to serve through traffic, with mobility being secondary to access. Local corridors provide both traffic service and land service and are given equal consideration. Local corridors typically are 2 lane undivided highways with at-grade intersections.

Local corridors have some degree of access control. New private access connections for the development of land are still preferred from existing public roads where possible or via new public road connections at approved locations.

All private access connections for existing lots of record will be permitted to remain. New private access connections or upgrading of an existing access connection (i.e. Residential access to Commercial access) for a land use change, which meet the minimum spacing, density, frontage and safety requirements outlined in this guideline will be considered.

Access connections to be located along a public road within 800 m of an at-grade intersection are subject to MTO’s permit control area (Figure 3) and may require a Building and Land Use Permit.
Figure 21: Functional Classification System, Northern Ontario
10. Bibliography

1. 4th National Conference on access management Portland, Oregon “Access Spacing and Safety: Recent Research Results”, Herbert Levinson and J. Gluck August 2000


8. Center for Transportation Research and Education at Iowa State University & Iowa Department of Transportation, “Iowa access management Handbook”, 2000

9. Center for Transportation Research and Education at Iowa State University, “Iowa State University Center for Transportation Research and Education Website - Iowa access management Awareness Project


20. Ministry of Transportation, Ontario cancelled “Memorandums PD-77-03 and ED-77-50” dated August 2, 1977


23. Minnesota Department of Transportation “Technical Study #4 - Toward An Access Classification System and Spacing guidelines” – February 1999


29. New Mexico State Highway Transportation Department, “New Mexico State access management Manual”, 2001


### 11. Glossary

<table>
<thead>
<tr>
<th><strong>Access connection</strong></th>
<th>An entrance onto a provincial highway or onto a public road in the vicinity of a provincial highway (within MTO’s permit control areas).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access connection depth</strong></td>
<td>The distance that should exist between the end of a turning radius at a corner and the next available turnoff. For details, see section 5.4.8 of this guideline.</td>
</tr>
<tr>
<td><strong>Access density</strong></td>
<td>The number of access connections per kilometre on each side of a highway.</td>
</tr>
<tr>
<td><strong>Access management</strong></td>
<td>Preserves the safety and efficiency of provincial highways. It is the process that manages entrances onto provincial highways and onto roads in the vicinity of a provincial highway, within MTO’s permit control areas. We refer to these entrances as access connections.</td>
</tr>
<tr>
<td><strong>Access road</strong></td>
<td>A proposed municipally owned and/or maintained road located across from a freeway entrance or exit ramp. It provides a direct connection to and from the freeway.</td>
</tr>
<tr>
<td><strong>Arterial</strong></td>
<td>Divided or undivided highways with at-grade intersections. The role of an arterial is to provide mobility. An arterial may have sections of freeway or staged freeway within its corridor. Arterials that are fully controlled-access highways are called Principal Arterials. Refer to Chapter 9 for a complete listing of Access Management Classifications.</td>
</tr>
<tr>
<td><strong>Auxiliary access</strong></td>
<td>A secondary means of access connection to a highway from a parcel of land that is already served by another access connection type. This is typically used where internal access to the total holding is impractical due to topographical or physical features, such as a creek, municipal drain, etc. Refer to Chapter 8 for a complete listing of access connection types.</td>
</tr>
<tr>
<td><strong>Building and Land Use permit</strong></td>
<td>Permits an access connection (entrance) to be constructed onto an existing or proposed <em>public road</em> that is near a provincial highway within MTO’s permit control areas.</td>
</tr>
<tr>
<td><strong>Channelization</strong></td>
<td>The separation of right turn and left turn traffic flow by means of traffic markings and islands.</td>
</tr>
</tbody>
</table>
**Collector**
Undivided highways with at-grade intersections. Its role is to balance mobility and access, but access is secondary to mobility. Refer to Chapter 9 for a complete listing of Access Management Classifications.

**Commercial access**
A private access connection to a highway from a parcel of land zoned for commercial, industrial, institutional, or multi-residential land use. Refer to Chapter 8 for a complete listing of access connection types.

**Design speed**
A selected speed used to determine the appropriate geometric design elements for a particular section of highway.

**Egress**
The means of entering a highway from an access connection (entrance) or intersection.

**Entrance permit**
Formal MTO authorization for an access connection (entrance) to be constructed onto a provincial highway.

**Farmstead access**
An access connection to a highway from a farmstead residence. Refer to Chapter 8 for a complete listing of access connection types.

**Field access**
An access connection to a highway from a vacant lot of record or auxiliary access for a Farmstead lot. Refer to Chapter 8 for a complete listing of access connection types and section 5.5.10 for details about multiple access connections.

**Freeway**
Highways that are built to accommodate the movement of large volumes of traffic at high speed under free flow conditions, with full control of access. Opposing traffic lanes are separated and access is provided by grade-separated interchanges only. Refer to Chapter 9 for a complete listing of Access Management Classifications.

**Freeway ramp terminal – Entrance or Exit**
That part of an entrance or exit ramp that intersects with the crossing road.

**Functional intersection area**
The section of highway or crossing road that extends both upstream and downstream from the physical intersection area itself. This enables a motorist to enter and pass through an intersection before having to consider a potential conflict at a subsequent access connection.
### Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functional interchange area</strong></td>
<td>The section of highway or crossing road that extends both upstream and downstream from the physical freeway ramp terminal area itself. This enables a motorist to enter and pass through the freeway ramp terminal intersection before having to consider a potential conflict at a subsequent access connection.</td>
</tr>
<tr>
<td><strong>GDSOH</strong></td>
<td>Geometric Design Standards for Ontario Highways manual. It provides MTO's policies and standards for the design of highways, intersections and interchanges.</td>
</tr>
<tr>
<td><strong>HAMP</strong></td>
<td>Highway Access Management Plan. It provides MTO and local road and planning authorities with a comprehensive highway access management plan for a highway segment or corridor. For new highways, a HAMP will be developed as part of the overall planning process.</td>
</tr>
<tr>
<td><strong>I-HAMP</strong></td>
<td>Interchange Highway Access Management Plan. It provides MTO and local road and planning authorities with a comprehensive access management plan for the interchange area. For new interchanges, an I-HAMP will be developed as part of the overall planning process.</td>
</tr>
<tr>
<td><strong>Infilling</strong></td>
<td>The creation of new lots of record, development of vacant lots of record, or redevelopment of existing lots of record in built-up, urban areas (towns, villages, hamlets) where the pattern of development and the building line are well established and where the posted speed is less than 70 km/h.</td>
</tr>
<tr>
<td><strong>Ingress</strong></td>
<td>The means of entering an access connection (entrance) or intersection from a highway.</td>
</tr>
<tr>
<td><strong>Interchange</strong></td>
<td>A grade-separated intersection of a freeway, staged freeway or arterial highway with a public road or other provincial highway.</td>
</tr>
<tr>
<td><strong>King's highway</strong></td>
<td>Any highway that is not designated as a controlled-access highway is considered in this guideline to be a King’s highway.</td>
</tr>
<tr>
<td><strong>Letter of Credit</strong></td>
<td>A guarantee from a major Canadian financial institution. MTO reserves the right to request a Letter of Credit as a condition of issuing a permit.</td>
</tr>
<tr>
<td><strong>Local</strong></td>
<td>Undivided highway with at-grade intersections. Its role is to serve through traffic, but mobility is secondary to access. Refer to Chapter 9 for a complete listing of Access Management Classifications.</td>
</tr>
</tbody>
</table>
Lot of record | A parcel of land that is described in a deed or other legal document OR that is shown as a lot or block within a registered subdivision plan.

Mobility | The level and degree of uninterrupted traffic movement along a highway.

MTO Work Project | MTO planning and design studies such as: MTO Planning and Environmental Assessment Studies, Preliminary Design and Environmental Assessment Studies, or Work Projects on the 5-year Capital Construction Program for Provincial Highways.

Mutual access | An access connection (entrance) to a highway from two or more lots of record that all have highway frontage.

Permit control area | The area in the vicinity of a provincial highway within which any development requires an MTO permit.

Posted speed | The maximum legal vehicular speed allowed within a section of highway.

Principal arterial | Highways that are fully controlled-access highways but are not freeways. Refer to Chapter 9 for a complete listing of Access Management Classifications.

Private access connection | An access connection (entrance) from a lot of record onto a provincial highway or onto a public road in the vicinity of a provincial highway within MTO’s permit control areas.

Private road | A road under the jurisdiction and control of a person, an authority, a corporation, etc. who is the owner of the lot of record which the road provides access to.

Property owner | Includes a mortgage, lessee, tenant, occupant, person entitled to a limited estate or interest, and a guardian executor, administrator, or trustee in whom land or any interest therein is vested.

PTHIA | The Public Transportation and Highway Improvement Act R.S.O. 1990, c.P.50 – sections of this act gives MTO the authority to issue permits within control areas within the vicinity of a designated highway.

Public road | A road that is under governmental jurisdiction and on which public money has been spent for its repair and maintenance.
Residential access  An access connection (entrance) to a highway from a residential lot of record. Refer to Chapter 8 for a complete listing of access connection types.

Resource access  An access connection (entrance) to a highway for logging operations, mining explorations, gravel pit, etc. Refer to Chapter 8 for a complete listing of access connection types.

Service road  A road located parallel and adjacent to a freeway, staged freeway or arterial that provides access to adjacent properties. Refer to Chapter 8 for a complete listing of access connection types.

Sight distance  The unobstructed view that a motorist travelling on, entering, or crossing the highway has with respect to other objects to avoid a collision.

Staged freeway  Highways that are projected to become freeways at some time in the future. Staged freeway corridors have full control of access connections, with access provided via either grade-separated interchanges or public road only at approved locations for future grade-separated interchanges. Refer to Chapter 9 for a complete listing of Access Management Classifications.

Stakeholder  A property owner, developer or agency.

Temporary access  An access connection (entrance) to a highway for a specific project that will last a relatively short period of time and will ultimately be removed. Refer to Chapter 8 for a complete listing of access connection types.

Utility access  An access connection (entrance) to a highway from utility installation. Refer to Chapter 8 for a complete listing of access connection types.
Appendix A - Mutual Access
MUTUAL ACCESS GUIDE AND PROCEDURES

To ensure continuous access to all lots served by a Mutual Access, the deed for each lot shall contain an easement / right-of-way in favour of all other lots sharing the Mutual Access. The easement / right-of-way rights are to be incorporated into the deeds of all the lots.

For lots where a Mutual Access has been permitted, a 0.3 m reserve will also be required across the entire highway frontage of the properties involved, with the exception of the opening for the Mutual Access connection. The exception to this requirement are those properties with an existing physical constraint that precludes the ability to obtain a direct access to the highway, in which case a 0.3 m reserve is not required.

All 0.3 m reserves are to be deeded to MTO free and clear of all encumbrances. A preliminary reference plan, draft deed and certification of title (example below) are to be submitted to MTO for its review and approval prior to depositing/registration. Once approved, the property owner’s solicitor, on behalf of MTO, can deposit the reference plan, register the deed and execute the certification of title. MTO is exempt from Land Transfer Tax and therefore an affidavit is not required. When forwarding the registered deed to MTO any applicable discharges shall also be provided.

The transferee name on the deed is to read as follows:

“Her Majesty the Queen in right of the Province of Ontario, represented by the Minister of Transportation for the Province of Ontario”.

In addition, the preliminary reference plan and draft deeds associated with the establishment of a Mutual Access itself shall be submitted to MTO prior to registration to ensure proper wording and layout.

The total width of the easement / right-of-way for a Mutual Access based on the land use should typically be:

- 10 m for Residential Access
- 20 m for Farmstead
- 20 m Commercial Access

MTO provides the following diagrams as examples for establishing a Mutual Access.
Example 1
The reference plan should be prepared to illustrate a minimum of six (6) parts as shown below:

Parts 1 and 2 (plus a right-of-way over part 3 and an easement over part 2).
Parts 3 and 4 (plus a right-of-way over part 2 and an easement over part 3).
Parts 5 and 6 are 0.3 m reserves.

Example 2
The reference plan should be prepared to illustrate a minimum of five (5) parts as shown below:

Part 1 (plus a right-of-way over part 3).
Parts 2 and 3 (and an easement over part 3).
Parts 4 and 5 are 0.3 m reserves.
Example 3

The reference plan should be prepared to illustrate a minimum of eight (8) parts as shown below:

```
  1
  |-
  2
  |-
  3
  |-
  4
  |-
  5
  |-
  6
  |-
  7
  |-
  8
```

Part 1 (plus a right-of-way over parts 4 and 5).

Parts 2, 4, 5 and 6 (with an easement over parts 4, 5 and 6).

Part 3 (plus a right-of-way over parts 5 and 6).

Parts 7 and 8 are 0.3 m reserves.

Example 4

The reference plan should be prepared to illustrate a minimum of six (6) parts as shown below:

```
  1
  |-
  2
  |-
  |-
  3
  |-
  4
  |-
  5
  |-
  6
```

Part 1 (plus a right-of-way over part 3).

Parts 2 and 3 (and an easement over part 3).

Parts 4, 5 and 6 are 0.3 m reserves.
Certification of Title

This is to certify that the Minister of Transportation is the registered owner of a parcel of land situate, lying and being in Lot ________, Concession ____________, in the (municipality), in the (Regional Municipality/County), more particularly described as Part(s) _____ on Reference Plan ____________ registered in the Registry Office for the Land Registry Division of (___________), and that the Minister has a good and marketable title in fee simple to the said lands, free and clear of all mortgages, liens and encumbrances.

On conducting a search with the Sheriff's Office for the Judicial District of, we discovered no executions filed against any prior registered owners on title over the last forty years.

The said lands were conveyed to the Minister of Transportation on the ________ day of __________, 20___, by a deed registered in the Registry Office for the Registry Division of(______________) as Instrument No.______________.

DATED at the (municipality) this ___day of __________________, 20__.

Yours very truly,

Name of Solicitor
Address of Solicitor
Appendix B - Design / Construction Standard Drawings for Entrances
Design / Construction Standard Drawings for Entrances

Ontario Provincial Standard Drawings (OPSD) – Volume 3, Drawings for Roads, Barriers, Drainage, Sanitary Sewers, Watermains and Structures

This is a partial listing of the most widely used OPSD design / construction drawings for Public / Private Roads and private entrances.

- OPSD 0300.0100 - Side Road Entrance on Fill
- OPSD 0300.0200 - Side Road Entrance - Earth Cut
- OPSD 0300.0300 - Side Road Entrance - Rock Cut
- OPSD 0301.0100 - Rural Entrances to Roads on Fill
- OPSD 0301.0200 - Rural Entrances to Roads in Earth Cut with Culvert Installation
- OPSD 0301.0300 - Rural Entrances to Roads in Rock Cut

These standards are available:

- via MTO’s public website: [http://www.ragsb.mto.gov.on.ca/techpubs/ops.nsf/wv?openview&RestrictToCategory=Volume 3&count=1000](http://www.ragsb.mto.gov.on.ca/techpubs/ops.nsf/wv?openview&RestrictToCategory=Volume 3&count=1000);

- for purchase, via the ServiceOntario Publications website: [https://www.publications.serviceontario.ca/pubont/servlet/ecom/](https://www.publications.serviceontario.ca/pubont/servlet/ecom/)

Commercial Site Access Standard (CSAS) Designs

This is a listing of the CSAS design / construction drawings for Commercial entrances.

- CSAS-1 to CSAS-22 - Service Station Entrance Designs
- CSAS-23 - Truck Access Design
- CSAS-24 to CSAS-27 - Entrance to Shopping Centre Designs
- CSAS-28 - Entrance to Recreational Centre Design
- CSAS-29 - Entrance to Small Utility Station Design
- CSAS-30 - Entrance to Large Utility Station Design
- CSAS-31 to CSAS-32 - Entrance to Small Business Designs
- CSAS-PROF - Commercial Site Profile Standard

These standards are available:

- via MTO’s public website by way of the online MTO Research Library catalogue: [http://www.mto.gov.on.ca/english/transrd/](http://www.mto.gov.on.ca/english/transrd/)
- for purchase, via the ServiceOntario Publications website: [https://www.publications.serviceontario.ca/pubont/servlet/ecom/](https://www.publications.serviceontario.ca/pubont/servlet/ecom/)
Appendix C - Access Roads at Freeway Ramp Terminals
Access Roads at Freeway Ramp Terminals

1.0 INTRODUCTION

The purpose of this Appendix is to provide design parameters and an approval process for a proposed Access Road at a freeway ramp terminal. It applies to both new and existing interchanges. Approval of the Ministry of Transportation (MTO) shall be obtained before an Access Road can be implemented.

MTO may consider an access road opposite a freeway ramp terminal in high volume urbanized areas, in order to deal with traffic operational problems at an interchange. This solution would only be considered as a last resort after all other alternatives have been exhausted. MTO shall not consider an access road opposite a freeway ramp terminal in order to allow Proponents to develop greenspace land in rural areas.

This Appendix is not to be used as a tool to gain approval for an Access Road opposite a ramp terminal at an interchange that provides the only means of access connection for the development. MTO shall not consider Access Roads at interchanges for development purposes, unless Primary and Secondary Access connections are located elsewhere on the Crossing Road and/or municipal roads. Offset requirements for the Primary and Secondary Access connections are provided elsewhere in this Guideline.

This Appendix is based upon the following objectives, in order of priority:

- safety,
- capacity,
- desirable and efficient traffic operations,
- corridor management, and
- provision for long-range planning and growth (i.e. future expansion of the freeway system).

Potential challenges of an Access Road that shall be considered by a Proponent include:

- increased traffic volumes,
- reduced intersection capacity,
- reconfiguration of the freeway on-ramp and speed change lane / taper,
- weaving on the Crossing Road at the freeway entrance ramp,
Appendix C - Access Roads at Freeway Ramp Terminals

- more complex traffic signal phasing, and
- general traffic operation problems.

As such, introducing an Access Road could adversely impact capacity and traffic operations at the freeway interchange. The implementation of the Access Road, if approved, shall require a design which addresses the objectives and challenges discussed earlier to maintain a high level of service at a freeway ramp terminal intersection, without adversely impacting the overall safety and operational integrity of the interchange or the freeway.

This Appendix supplements well-established general freeway interchange and access design standards including those available elsewhere in this Guideline, the MTO Geometric Design Standards for Ontario Highways manual (GDSOH manual), the MTO Commercial Site Access Policy and Standard Designs (CSAS) and the Ontario Traffic Manual (OTM). In particular, existing design standards to be followed include alignment and intersection and interchange configuration standards outlined elsewhere in this Guideline and in the GDSOH manual. Visibility requirements, including sight distance requirements in this Guideline and the GDSOH manual shall also be met for development of any Access Road at a freeway ramp terminal location.

Access Roads at freeway ramp terminals have been provided on a limited case-by-case basis in Ontario. By researching literature and surveying other provinces and states in North America during the development of this Appendix, it was found that other jurisdictions rarely allow an Access Road at a freeway ramp terminal. No formal guidelines or policies were found.

The majority of interchanges in Ontario are Parclo type interchanges. In a Parclo interchange where ramps do not exist in all quadrants, an Access Road at a freeway ramp terminal can be considered provided it can be physically accommodated without compromising future expansion needs. In Ontario the Parclo A-4 interchange configuration is desirable. An Access Road at a Parclo A-4 interchange can be considered provided it can be physically accommodated by a grade separation constructed over the freeway entrance ramp. In some situations, MTO may consider the reconfiguration of a Parclo A-4 interchange such that the freeway entrance ramp is relocated downstream of the Access Road intersection in lieu of a grade separation.

In high volume urbanized areas, freeway exit ramps typically end at a signalized intersecting Crossing Road, which is typically a T (or three-legged) intersection. Freeway exit ramps have no access along the length of the ramp between the freeway and the signalized Crossing Road. An Access Road at a freeway ramp terminal is considered to be the provision of the fourth leg at the traffic signals across from a freeway entrance or exit ramp, thereby providing a high level of traffic service to and from the freeway for a development.
The provision of an Access Road at a freeway ramp terminal essentially converts a T-intersection into a cross or four-way intersection. This offers operational challenges that are not typical of intersections between two municipal roads. A key operational safety issue of an Access Road at freeway ramp terminals is the relatively high differential in operating speeds between the freeway and the Access Road itself. Therefore, the consideration of an Access Road at a freeway ramp terminal intersection shall accommodate the interaction between the relatively higher speeds of the freeway ramp traffic and the typically slower speeds of the local site traffic using the Access Road.

Section 5.0 of this Appendix provides the process and requirements for a Proponent’s submission for an Access Road at a freeway ramp terminal. The approval process for an Access Road requires analysis of safety, capacity and operational issues. The key component of the approval process is the submission of a Feasibility Study Report (FSR) by a professional engineer for MTO approval. The FSR shall establish a business case for the Access Road; otherwise the Access Road shall not be considered.
Appendix C - Access Roads at Freeway Ramp Terminals

2.0 GENERAL DESCRIPTION OF FREEWAY RAMP TERMINAL CONFIGURATIONS AND POTENTIAL ACCESS ROAD LOCATIONS

The consideration of a proposed Access Road at a freeway ramp terminal depends primarily on the existing configuration of the freeway interchange and future expansion needs. The following are interchange configurations that may accommodate a proposed Access Road:

- Parclo A-2 interchange (Figure 1),
- Parclo A-4 interchange (Figures 2A and 2B),
- Parclo B-2 interchange (Figure 3),
- Parclo B-4 interchange (Figure 4), and
- Buttonhook interchange (Figures 5 and 6).

2.1 Parclo A Type Interchanges

Parclo A type interchanges use loop ramps to provide access for traffic travelling from the Crossing Road to the freeway. There are essentially two configurations of the Parclo A type interchange; Parclo A-2 and Parclo A-4, as shown in Figures 1, 2A and 2B.

The major difference between the Parclo A-2 and A-4 configurations when considering an Access Road is the positioning of the entrance ramps to the freeway. For a Parclo A-2, the Access Road would be directly opposite the exit and entrance ramps. For a Parclo A-4, the Access Road would only be opposite the exit ramp and would require either:

- a grade separation over or under the entrance ramp to the freeway, or
- reconfiguration of the freeway on-ramp and speed change lane / taper.

2.2 Parclo B Type Interchanges

Parclo B type interchanges use loop ramps to provide access for traffic travelling from the freeway to the Crossing Road. There are essentially two configurations of the Parclo B type interchange designs, Parclo B-2 and Parclo B-4, as shown in Figures 3 and 4.

The major difference between the Parclo B-2 and B-4 configurations when considering an Access Road is the positioning of the entrance ramps to the freeway. For a Parclo B-2, the Access Road would be directly opposite the exit and entrance ramps. For a Parclo B-4, the Access Road would only be opposite the entrance ramp and would require a grade separation over or under the exit ramp from the freeway.
2.3 Buttonhook Interchanges

Buttonhook interchanges do not connect directly to the Crossing Road, but to a Connecting Road that typically runs parallel to the freeway. Figure 5 illustrates Buttonhook interchange ramps on the near side of the Crossing Road. Figure 6 illustrates Buttonhook interchange ramps on the far side of the Crossing Road.

For a Buttonhook Interchange, the Access Road would be located on the Connecting Road directly opposite the exit and entrance ramps.

For the purposes of this Appendix, the intersection of the Crossing Road and Connecting Road shall be considered the same as the intersection of a freeway ramp terminal and Crossing Road.
3.0 COMMON SAFETY, DESIGN AND OPERATIONAL CONSIDERATIONS FOR ACCESS ROADS AT FREEWAY RAMP TERMINALS – ALL INTERCHANGE CONFIGURATIONS

It shall be understood that under no circumstances shall the service levels for traffic on the Access Road take precedence over the service levels on the freeway exit ramp or on the Crossing Road.

As a minimum, a Proponent’s FSR shall review and address the following safety, design and operational concerns for an Access Road at an interchange, for consideration by MTO.

3.1 Exit and/or Entrance Ramp Design

Consideration of an Access Road requires the review and possible adjustment of the length, alignment, cross-fall and lane configuration of the exit and/or entrance ramps and their respective speed change lanes on the freeway and Crossing Road (or Connecting Road for Buttonhook interchanges) to ensure they meet all geometric design requirements for the appropriate design speeds. This review shall include a minimum 5-year summary of collisions of the exit and/or entrance ramps to help identify potential operational concerns that shall need to be addressed as part of the consideration for an Access Road.

3.2 Crossfall Correction at Freeway Ramp Terminal Intersection

Consideration of an Access Road requires the review and possible adjustment of the profiles, crossfalls, and drainage of the Crossing Road (or Connecting Road for Buttonhook interchanges) and exit and/or entrance ramps, to safely accommodate the through movements and turning movements at the ramp terminal intersection.

3.3 Inbound Through Movement and First Internal Intersection along the Access Road

An inbound through movement from the ramp terminal intersection into an Access Road may be considered for the following interchange configurations: Parclo A-2, Parclo A-4, Parclo B-2 and Buttonhook (near side and far side). This movement may be considered provided all design, operations and safety issues are considered and addressed. An inbound through movement from the ramp terminal intersection for a Parclo B-4 interchange configuration is not applicable.

To ensure that the movements at the ramp terminal / Crossing Road intersection with the new Access Road do not adversely affect the capacity of the exit ramp’s left turning traffic, an exclusive lane(s) shall be provided for the through traffic on the ramp and on the Access Road. The design should protect for the possibility of two lanes of inbound traffic. The length of this lane(s) shall depend on the geometric features of the ramp, the available sight distances and MTO’s review of the FSR.
Appendix C - Access Roads at Freeway Ramp Terminals

It is crucial that the ramp design allow for the adequate sight distance requirements, including visibility distances to traffic signals. Sightlines shall be long enough along the speed change lane to points on the radius of the ramp where the maximum estimated queue length is expected to occur.

To provide guidance for an exclusive through lane(s), signage and pavement markings shall be provided on the ramp. The appropriate lane designation signs shall be placed in a location that does not block the sight lines between the approaching drivers and the traffic signals. Currently, the OTM for regulatory signs requires that lane designation arrows be provided on overhead signs for four-lane ramp terminals. Due to their unique nature, freeway exit ramps leading to an Access Road shall have overhead signs for three lane cross sections.

In the absence of an inbound through movement, the Crossing Road traffic signal timing is generally set for the time required to clear the left turn movement from the freeway ramp. Given the inbound through movement shall be serviced concurrently with the left and right turn movements from the ramp, and to avoid a potential degradation in the level of service, it is recommended that the average delay per vehicle calculated for the inbound through movement not exceed the projected average delay per vehicle for the critical ramp movement, which is typically the left turn movement from the ramp. Adequate Level of Service “C” or better for the through movement shall be maintained. In this way, the overall level of service due to the addition of the inbound through movement is not being compromised.

Driving on freeways leads to speed adaptation, even for short periods of time. As traffic exits the freeway, drivers need time to adapt to a new lower driving speed environment. As drivers traverse the ramp terminal / Crossing Road intersection (or Connecting Road for Buttonhook interchanges) and enter the Access Road into the development, they need time to orient themselves. Therefore an unimpeded offset distance between the ramp terminal / Crossing Road intersection and the first internal intersection along the Access Road is required.

MTO’s offset distance requirement between the ramp terminal / Crossing Road intersection and the first internal intersection along the Access Road shall be 400 m desirable / 200 m minimum, whether it is an intersection with another internal roadway or access to parking areas. Consideration by MTO to reduce the spacing below the 400 m desirable spacing offset to any point down to and including the 200 m minimum spacing offset shall only be considered based on MTO’s review of the FSR. The FSR shall clearly indicate and support a reduction in offset that shall not affect the overall operations and safety characteristics of the existing ramp terminal and Crossing Road intersection. MTO’s desirable / minimum offset distance requirements for the first internal intersection along the Access Road are further discussed in Section 4.0.

Where the first internal intersection along the Access Road is to be signalized, the offset distance shall not be less than the 400 m desirable offset.
3.4 Inbound Left Turn Movements for Access Roads

The intention of an Access Road into a development, by definition, is to provide ingress and egress for traffic to and from the freeway and act as a Secondary Access to the development. Access to the development site shall be provided at Primary and Secondary Access connections located elsewhere on the Crossing Road (or Connecting Road for Buttonhook interchange) or adjacent municipal road system. This access arrangement ensures the majority of turning movements in and out of the development occur away from the already complex operations of the interchange. The overall development site plan shall ensure that the development’s Primary and Secondary Access connections are designed to service the traffic from the Crossing Road and adjacent municipal roads, including provisions for inbound left turn movements. This Guideline provides for standard offset requirements for Primary and Secondary Access connections located elsewhere on the Crossing Road and/or municipal roads. For new development, this Guideline’s policies and standards shall be satisfied for Primary and Secondary Access connections located on the Crossing Road.

To avoid traffic operations difficulties, reduce potential congestion and collisions at the interchange, and ensure consistency for the Access Road to be used as a secondary access to the development only, an inbound left turn is not permitted into the Access Road from the Crossing Road. The necessary turning prohibition signs and intersection design elements shall be provided to maximize driver compliance with this restriction.

3.5 Inbound Right Turn Movements for Access Roads

Inbound right turns shall be considered into the Access Road provided all safety and operational concerns are considered and addressed.

The Primary and Secondary Access connections to / from the site shall be located elsewhere on the Crossing Road (or Connecting Road for Buttonhook interchanges) or adjacent municipal roads and not at the freeway ramps. Adequate site accesses shall be provided, such that the majority of right turn traffic into the development site shall occur at the development’s Primary and Secondary Access connections. An Adequate Level of Service “C” shall be maintained at the Primary and Secondary Access connections to minimize the right turn diversions to the Access Road at a freeway ramp terminal.

When a separate right turn taper or lane is required from the Crossing Road into the Access Road, it shall not be continued through the intersection.
3.6 Outbound Through Movements for Access Roads

An outbound through movement from the Access Road may be considered for traffic destined to the freeway for the following interchange configurations: Parclo A-2, Parclo B-2, Parclo B-4 and Buttonhook (near side and far side). This movement may be considered provided all design, operations and safety issues are considered and addressed. An outbound through movement from the Access Road for a Parclo A-4 interchange configuration is not applicable.

The “in” and “out”-bound lanes of the Access Road shall be separated by a median island. This separation is required to ensure that the inbound Access Road lane is aligned with the inbound through lane from the freeway ramp, while the outbound through lane of the Access Road is aligned with the opposite entrance ramp. The distance of this separation is dependant upon the number of left turn lanes on the freeway exit ramp and the separation between the entrance and exit ramps for the freeway.

An additional signal phase is required for the outbound through movement. This movement shall only be considered where the additional phase can be accommodated while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.

It may be necessary to remove the pedestrian crossing adjacent to and on the right of the outbound through movement. Eliminating this pedestrian movement allows the critical left turn from the freeway exit ramp to move more freely to process more traffic. It is also recommended that this pedestrian movement be removed to reduce the potential vehicle-pedestrian conflicts with the left turning traffic leaving the freeway ramp. Elimination of this pedestrian movement would require approval of the local municipality and/or road authority; otherwise, the outbound through movement would not be approved by MTO.

It is also recommended that large trucks be prohibited from exiting the development site using the Access Road, to maximize the capacity and reduce the effects of the slow acceleration capabilities of most large trucks.

3.7 Outbound Left Turn Movements for Access Roads

Parclo A and Buttonhook (near side) Interchange Configurations

The intention of an Access Road into a development is to provide ingress and egress for traffic to and from the freeway. Access to and from the Crossing Road and adjacent municipal road shall be provided at Primary and Secondary Access connections, located elsewhere outside the interchange. This access arrangement ensures the majority of turning movements in and out of the development occur away from the already complex operations of the interchange.
The overall development site plan shall ensure that the development’s Primary and Secondary Access connections are designed to service the traffic to and from the municipal roads, including provisions for outbound left turn movements.

To simplify traffic operations around the interchange and to ensure consistency with the Access Road definition, an outbound left turn movement is not permitted from the Access Road onto the Crossing Road.

Parclo B and Buttonhook (far side) Interchange Configurations

An outbound left turn movement from the Access Road may be considered to orientate drivers back into the freeway interchange to return to their point of origin. The position of the outbound left turn lane should be separated from the through and/or right turn lanes of the Access Road by a median island so that the outbound left turn lane is positioned directly opposite one of the left turn lanes on the freeway exit ramp.

To avoid the potential for “side swipe” collisions between the outbound left turning traffic and the freeway exit-ramp traffic, the signal phasing could be set to provide separation on a temporal basis by either a split phase operation or a protected left turn operation for the freeway exit ramp. However, due to the typically high volumes that exist at most interchanges and would be expected with the new Access Road, split phase operation or protected left turn operation for the freeway exit ramp may not always be possible, as the loss of green time for the other movements would cause unacceptable impacts to the traffic operations.

Since an additional signal phase is required for the outbound access, movements shall only be considered where the additional phase can be accommodated while maintaining an adequate level of service for both the freeway exit ramp and the Crossing Road.

It is also recommended that large trucks be restricted from exiting the development site using the Access Road, to maximize the capacity and reduce the effects of the slow acceleration capabilities of most large trucks.

3.8 Outbound Right Turn Movements for Access Roads

An outbound right turn movement from the Access Road may be considered for all interchange configurations. To provide more protection for pedestrians and reduce potential vehicle conflicts with other turning movements in the intersection, the outbound right turns shall be controlled by the traffic signal and shall not be channelized.

Provision of an outbound right turn requires the Crossing Road to have at least one additional lane than the number of left turn lanes from the exit ramp (i.e. double left lanes requires three lanes or more on the Crossing Road per direction). Where an additional lane does not exist on the Crossing Road, a “no right turn on red” prohibition shall be used to avoid conflicts from the left turn movements from the freeway exit ramp.
In addition, the signal phasing could be set to provide separation on a temporal basis by either a split phase operation or a protected left turn operation for the freeway exit ramp. However, due to the typically high volumes that exist at most interchanges and that would be expected with the new Access Road, split phase operation or protected left turn operation for the freeway exit ramp may not always be possible, as the loss of green time for the other movements would cause unacceptable impacts to the traffic operations.

Outbound movements shall only be considered where the additional phase can be accommodated while maintaining an adequate level of service for both the freeway exit ramp and the Crossing Road.

It is also required that large trucks be prohibited from exiting the development site using the Access Road, to maximize the capacity and reduce the effects of the slow acceleration capabilities of most large trucks.

It shall also be understood that under no circumstances shall the service levels for traffic on the Access Road take precedence over the service levels on the freeway exit ramp or on the Crossing Road.

3.9 FSR Challenges

The Proponent shall consider and address the following safety, design and operational challenges in the FSR, if an Access Road at a freeway ramp terminal is to be potentially considered by MTO:

- differences in operating speeds between freeway ramp traffic and local traffic,
- maintaining capacity and level of service for existing intersection movements,
- provision for adequate storage lengths for all traffic movements,
- signal timing / phasing at the ramp terminal intersection,
- signal progression with adjacent traffic signals,
- additional right-of-way requirements,
- regulatory, warning and guide signing, and
- provision for safe pedestrian and cyclist movements.
4.0 PARAMETERS FOR ACCESS ROADS AT FREEWAY RAMP TERMINALS

In addition to the common safety, design and operational considerations outlined in Section 3, the FSR shall address individual turning movement parameters for each type of interchange configuration that may accommodate a proposed Access Road.

The following outlines the individual turning movement parameters to be addressed for each type of interchange configuration.

4.1 Parameters for Access Roads at Freeway Ramp Terminals - Parclo A-2 Interchanges

An Access Road at a Parclo A-2 interchange may be considered if the freeway ramp geometry and operations meet or exceed the design standards of MTO. See Figure 1 for a generic diagram showing potential ingress and egress movements for an Access Road at a Parclo A-2 interchange.

For a standard Parclo A-2 interchange the following shall be considered:

- The freeway exit ramp would require adequate sight distances, appropriate lane configuration and adequate storage lengths for all traffic movements, including the additional Access Road traffic.
- The freeway entrance ramp would require adequate sight distances and appropriate lane configuration for all traffic movements, including the additional Access Road traffic.
- Where these requirements are not met, upgrading of the ramp would be required by the Proponent for an Access Road to be allowed at the freeway ramp terminal.

In addition, the following individual turning movement parameters shall be addressed.

4.1.1 Inbound Through Movement

As noted in Section 3.3 of this Appendix, an inbound through movement from the exit ramp may be considered into the Access Road, provided the following criteria are met:

- The offset distance from the Crossing Road to the first internal intersection within the site shall not be less than 400 m desirable / 200 m minimum.
- Where the first internal intersection along the Access Road is to be signalized, the offset distance shall under no circumstances be less than the 400 m minimum.
- The Access Road inbound through movement shall have the right-of-way over other traffic movements at the first internal intersection.
Appendix C - Access Roads at Freeway Ramp Terminals

- An exclusive lane(s) shall be provided for the through movement on the ramp.
- The exit ramp and the Access Road designs shall meet sight distance requirements along their full length.
- Pavement markings shall be provided to identify the lane designations on the ramp.
- Overhead signs shall be provided for freeway exit ramps with three lanes or more leading to an Access Road.
- The projected average delay per vehicle for the inbound through movement shall not exceed that of the critical movement on the ramp (typically the left turns), such that an Adequate Level of Service “C” is maintained.
- The Access Road shall not have a closure gate.

4.1.2 Inbound Left Turn

As noted in Section 3.4 of this Appendix, an inbound left turn movement from the Crossing Road shall not be permitted into the Access Road.

4.1.3 Inbound Right Turn

As noted in Section 3.5 of this Appendix, an inbound right turn movement from the Crossing Road may be considered into the Access Road, provided the following criteria are met:

- The majority of inbound right turns are provided for at the Primary and Secondary Access connections rather than at the Access Road.
- An Adequate Level of Service “C” shall be maintained for the inbound right turn movement at upstream Primary and Secondary Access connections, to minimize the right turn diversions to the Access Road.
- Should an exclusive right turn taper or lane be required, it shall terminate at the Access Road and shall not be continued through the intersection onto the Crossing Road.
- Advanced signing for the signalized intersection on the Crossing Road shall be provided.
4.1.4 Outbound Through Movement

As noted in Section 3.6 of this Appendix, an outbound through movement from the Access Road across the Crossing Road to a Freeway entrance ramp may be considered provided the following criteria are met:

- The outbound through movement shall align with the freeway entrance ramp on the opposite side of the Crossing Road.
- A separate phase shall be provided to accommodate outbound movements.
- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.
- The pedestrian crossing adjacent to and on the right of the outbound through movement shall be eliminated. (This would require approval of the local municipality and/or road authority; otherwise, the outbound through movement would not be approved by MTO.)
- Prohibiting outbound truck movements shall be considered to avoid delay to the critical movements.

4.1.5 Outbound Left Turn

As noted in Section 3.7 of the Appendix, an outbound left turn movement is not permitted from the Access Road onto the Crossing Road.

4.1.6 Outbound Right Turn

As noted in Section 3.8 of this Appendix, an outbound right turn movement from the Access Road may be considered provided the following criteria are met:

- The outbound right turn movement shall turn into a through lane on the Crossing Road.
- The outbound right turn shall be controlled by the traffic signals (i.e. no channelized right turn).
- A “no right turn on red” prohibition shall be considered to avoid unexpected and conflicting movements in the intersection.
- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.
- Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.
4.2 Parameters for Access Roads at Freeway Ramp Terminals - Parclo A-4 Interchanges

An Access Road at a Parclo A-4 interchange may be considered if the freeway ramp geometry and operations meet or exceed the design standards of MTO.

Based on the standard Parclo A-4 interchange configuration, the required design and construction of a grade separation under or over the freeway entrance ramp for the Access Road is the preferred alternative (Figure 2A).

MTO may in some situations consider the reconfiguration of the freeway entrance ramp downstream of the Access Road intersection in lieu of a grade separation (Figure 2B). The new geometry and design of the entrance ramp would need to be based on the GDSOH manual as per Table F5-1 using standard ramp radius. Deviations from the standards would not be accepted. Direct spiral exit terminal designs may be considered when there is a minimum of three lanes in each direction on the Crossing Road and its design speed is 60 km/h or less.

For a standard Parclo A-4 interchange the following shall be considered:

- The freeway exit ramp would require adequate sight distances, appropriate lane configuration, and adequate storage lengths for all traffic movements, including the additional Access Road traffic.
- Where these requirements are not met, upgrading of the ramp would be required by the Proponent to allow for an Access Road at the freeway ramp terminal.

In addition, the following individual turning movement parameters shall be addressed.

4.2.1 Inbound Through Movement

As noted in Section 3.3 of this Appendix, an inbound through movement from the exit ramp may be considered into the Access Road, provided the following criteria are met:

- A grade separation over or under the freeway entrance ramp (Figure 2A) or reconfiguration of the freeway entrance ramp downstream of the Access Road intersection in lieu of a grade separation (Figure 2B) would be required.
- The offset distance from the Crossing Road to the first internal intersection within the site shall not be less than 400 m desirable / 200 m minimum.
- Where the first internal intersection along the Access Road is to be signalized, the offset distance shall under no circumstances be less than the 400 m minimum.
Appendix C - Access Roads at Freeway Ramp Terminals

- The Access Road inbound through movement shall have the right-of-way over other traffic movements at the first internal intersection.

- An exclusive lane(s) shall be provided for the through movement on the ramp.

- The exit ramp and the Access Road designs shall meet sight distance requirements along their full length.

- Pavement markings shall be provided to identify the lane designations on the ramp.

- Overhead signs shall be provided for freeway exit ramps with three lanes or more leading to an Access Road.

- The projected average delay per vehicle for the inbound through movement shall not exceed that of the critical movement on the ramp (typically the left turns), such that an Adequate Level of Service “C” is maintained.

- The Access Road shall not have a closure gate.

4.2.2 Inbound Left Turn

As noted in Section 3.4 of this Appendix, an inbound left turn movement from the Crossing Road shall not be permitted into the Access Road.

4.2.3 Inbound Right Turn

As noted in Section 3.5 of this Appendix, an inbound right turn movement from the Crossing Road may be considered into the Access Road, provided the following criteria are met:

- The majority of inbound right turns are provided for at the Primary and Secondary Access connections rather than at the Access Road.

- An Adequate Level of Service “C” shall be maintained for the inbound right turn movement at upstream Primary and Secondary Access connections to minimize the right turn diversions to the Access Road.

- Should an exclusive right turn taper or lane be required, it shall terminate at the Access Road and shall not be continued through the intersection onto the Crossing Road.

- Where reconfiguration of the freeway entrance ramp upstream of the Access Road intersection is being considered in lieu of a grade separation, directional signing for the ramp shall be positioned to minimize driver confusion between the Access Road and the freeway entrance ramp.
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- Advanced signing on the Crossing Road for the Access Road and the entrance ramp shall be provided.

4.2.4 Outbound Through Movement

As noted in Section 3.6 of this Appendix, an outbound through movement from the Access Road for a Parclo A-4 interchange configuration is not applicable.

4.2.5 Outbound Left Turn

As noted in Section 3.7 of this Appendix, an outbound left turn movement is not permitted from the Access Road onto the Crossing Road.

4.2.6 Outbound Right Turn

As noted in Section 3.8 of this Appendix, an outbound right turn movement from the Access Road may be considered provided the following criteria are met:

- The outbound right turn movement shall turn into a through lane on the Crossing Road.
- The outbound right turn shall be controlled by the traffic signals (i.e. no channelized right turn).
- A “no right turn on red” prohibition shall be considered to avoid unexpected and conflicting movements in the intersection.
- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.
- Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.

4.3 Parameters For Access Roads At Freeway Ramp terminals - Parclo B-2 Interchanges

An Access Road at a Parclo B-2 interchange may be considered if the freeway ramp geometry and operations meet or exceed the design standards of MTO. See Figure 3 for a generic diagram showing potential ingress and egress movements for an Access Road at a Parclo B-2 interchange.

The configuration of the Parclo B-2 interchange uses a loop-ramp from the freeway onto the Crossing Road. This configuration requires drivers to reduce their speeds sooner than with the “S” shaped off-ramps of the Parclo A type designs. As drivers are transitioning their speeds and negotiating both vertical and horizontal curves, they are also required to orient themselves into the appropriate lanes on the ramp in advance of the interchange signals.
For a standard Parclo B-2 interchange the following shall be considered:

- The freeway exit ramp would require adequate sight distances, appropriate lane configuration and adequate storage lengths for all traffic movements, including the additional Access Road traffic.

- Where these requirements are not met, upgrading of the ramp would be required by the Proponent to allow for an Access Road at the freeway ramp terminal.

In addition, the following individual turning movement parameters shall be addressed.

4.3.1 Inbound Through Movement

As noted in Section 3.3 of this Appendix, an inbound through movement from the exit ramp may be considered into the Access Road, provided the following criteria are met:

- An exclusive lane(s) shall be provided for the through movement on the ramp that aligns with the inbound through movement of the Access Road. (Development of a through lane(s) may not be possible due to the configuration of the loop ramp inherent in the Parclo B-2 design. MTO would not approve an Access Road where the appropriate through lane(s) cannot be developed.)

- The offset distance from the Crossing Road to the first internal intersection within the site shall not be less than 400 m desirable / 200 m minimum.

- Where the first internal intersection along the Access Road is to be signalized, the offset distance shall under no circumstances be less than the 400 m minimum.

- The Access Road inbound through movement shall have the right-of-way over other traffic movements at the first internal intersection.

- The exit ramp and the Access Road designs shall meet sight distance requirements along their full length.

- Pavement markings shall be provided to identify the lane designations on the ramp.

- Overhead signs shall be provided for freeway exit ramps with three lanes or more leading to an Access Road.

- The projected average delay per vehicle for the inbound through movement shall not exceed that of the critical movement on the ramp (typically the left turns), such that an Adequate Level of Service “C” is maintained.

- The Access Road shall not have a closure gate.
4.3.2 Inbound Left Turn

As noted in Section 3.4 of this Appendix, an inbound left turn movement from the Crossing Road shall not be permitted into the Access Road.

4.3.3 Inbound Right Turn

As noted in Section 3.5 of this Appendix, an inbound right turn movement from the Crossing Road may be considered into the Access Road, provided the following criteria are met:

- The majority of inbound right turns are provided for at the Primary and Secondary Access connections rather than at the Access Road.
- An Adequate Level of Service “C” shall be maintained for the inbound right turn movement at upstream Primary and Secondary Access connections to minimize the right turn diversions to the Access Road.
- Should an exclusive right turn taper or lane be required, it shall terminate at the Access Road and shall not be continued through the intersection onto the Crossing Road.
- Advanced signing for the signalized intersection on the Crossing Road shall be provided.

4.3.4 Outbound Through Movement

As noted in Section 3.6 of this Appendix, an outbound through movement from the Access Road across the Crossing Road to a Freeway entrance ramp may be considered provided the following criteria are met:

- The outbound through movement shall align with the freeway entrance ramp on the opposite side of the Crossing Road.
- A separate phase shall be provided to accommodate outbound movements.
- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.
- Elimination of the pedestrian crossing adjacent to and on the right of the outbound through movement would be required. (This would require approval of the local municipality and/or road authority; otherwise, the outbound through movement would not be approved by MTO.)
- Prohibiting outbound truck movements shall be considered to avoid delay to the critical movements.
4.3.5 Outbound Left Turn

As noted in Section 3.7 of this Appendix, an outbound left turn movement from the Access Road may be considered provided the following criteria are met:

- The outbound left turn lanes shall be positioned opposite the left turn lane(s) on the freeway exit ramp.
- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.
- Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.

4.3.6 Outbound Right Turn

As noted in Section 3.8 of this Appendix, an outbound right turn movement from the Access Road may be considered provided the following criteria are met:

- The outbound right turn movement shall turn into a through lane on the Crossing Road.
- The outbound right turn shall be controlled by the traffic signals (i.e. no channelized right turn).
- A “no right turn on red” prohibition shall be considered to avoid unexpected and conflicting movements in the intersection.
- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.
- Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.

4.4 Parameters for Access Roads at Freeway Ramp terminals - Parclo B-4 Interchanges

An Access Road at a Parclo B-4 interchange would only provide for an exit from the development to the freeway. An Access Road at a Parclo B-4 interchange may be considered if the freeway ramp geometry and operations meet or exceed the design standards of MTO. See Figure 4 for a generic diagram showing potential ingress and egress movements for an Access Road at a Parclo B-4 interchange.

Based on the standard Parclo B-4 interchange configuration, it is unlikely that an Access Road could be accommodated to meet design standards for the freeway exit ramp without a grade separation. The design and construction of a grade separation under or over the freeway exit ramp for the Access Road is the only alternative.
MTO shall not consider the reconfiguration of the freeway exit ramp upstream of the Access Road intersection in lieu of a grade separation for the following reasons:

- potential for high speed rear-end collisions along the exit ramp resulting from queuing,
- potential for queuing along the exit ramp to extend back onto the freeway, and
- the weaving situation created between the exit ramp traffic from the freeway that is destined for the Crossing Road and the approaching Crossing Road traffic merging to the right to enter the Access Road.

For a standard Parclo B-4 interchange the following shall be considered:

- The freeway entrance ramp would require adequate sight distances and appropriate lane arrangements for all traffic movements, including the additional Access Road traffic.
- Where these requirements are not met, upgrading of the ramp would be required by the Proponent to allow for an Access Road at the freeway ramp terminal.

In addition, the following individual turning movement parameters shall be addressed.

**4.4.1 Inbound Through Movement**

As noted in Section 3.3 of this Appendix, an inbound through movement from the ramp terminal intersection for a Parclo B-4 interchange configuration is not applicable.

**4.4.2 Inbound Left Turn**

As noted in Section 3.4 of this Appendix, an inbound left turn movement from the Crossing Road shall not be permitted into the Access Road.

**4.4.3 Inbound Right Turn**

As noted in Section 3.5 of this Appendix, an inbound right turn movement from the Crossing Road may be considered into the Access Road, provided the following criteria are met:

- The majority of inbound right turns are provided for at the Primary and Secondary Access connections rather than at the Access Road.
- An Adequate Level of Service “C” shall be maintained for the inbound right turn movement at upstream Primary and Secondary Access connections to minimize the right turn diversions to the Access Road.
• Should an exclusive right turn taper or lane be required, it shall terminate at the Access Road and shall not be continued through the intersection onto the Crossing Road.

• Advanced signing for the signalized intersection on the Crossing Road shall be provided.

4.4.4 Outbound Through Movement

As noted in Section 3.6 of this Appendix, an outbound through movement from the Access Road across the Crossing Road to a Freeway entrance ramp may be considered provided the following criteria are met:

• The outbound through movement shall align with the freeway entrance ramp on the opposite side of the Crossing Road.

• A separate phase shall be provided to accommodate outbound movements.

• The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.

• Prohibiting outbound truck movements shall be considered to avoid delay to the critical movements.

4.4.5 Outbound Left Turn

As noted in Section 3.7 of this Appendix, an outbound left turn movement from the Access Road may be considered provided the following criteria are met:

• the necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Crossing Road.

• prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.

4.4.6 Outbound Right Turn

As noted in Section 3.8 of this Appendix, an outbound right turn movement from the Access Road may be considered provided the following criteria are met:

• The outbound right turn movement shall turn into a through lane on the Crossing Road.

• The outbound right turn shall be controlled by the traffic signals (i.e. no channelized right turn).
A “no right turn on red” prohibition shall be considered to avoid unexpected and conflicting movements in the intersection.

The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway entrance ramp and the Crossing Road.

Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.

4.5 Parameters for Access Roads at Freeway Ramp terminals – Buttonhook Interchanges (Near Side of Crossing Road)

An Access Road at a Buttonhook interchange (near side of Crossing Road) may be considered if the freeway ramp geometry and operations meet or exceed the design standards of MTO. See Figure 5 for a generic diagram showing potential ingress and egress movements for an Access Road at a Buttonhook interchange (near side of Crossing Road).

For a standard Buttonhook interchange (near side of Crossing Road) the following shall be considered:

- The freeway exit ramp would require adequate sight distances, appropriate lane configuration and adequate storage lengths for all traffic movements, including the additional Access Road traffic.

- The high left turn rate from the freeway exit ramp onto the Connecting Road conflicts with the Access Road outbound through movement.

- The limited spacing between the ramp terminal intersection and the Crossing Road intersection negates the possibility of an inbound left turn lane for an Access Road, due to left turn storage requirements for the Crossing Road intersection. An inbound left turn lane for an Access Road shall not be permitted.

- The limited spacing between the ramp terminal intersection and the Crossing Road intersection negates the possibility of a mid-block Primary Access connection, due to left turn storage requirements for the Crossing Road intersection.

- Where these requirements are not met, upgrading of the ramp would be required by the Proponent to allow for an Access Road at the freeway ramp terminal.

In addition, the following individual turning movement parameters shall be addressed.
4.5.1 Inbound Through Movement

As noted in Section 3.3 of this Appendix, an inbound through movement from the exit ramp may be considered into the Access Road, provided the following criteria are met:

- An exclusive lane(s) shall be provided for the through movement on the ramp that aligns with the inbound through movement of the Access Road.

- The offset distance from the Crossing Road to the first internal intersection within the site shall not be less than 400 m desirable / 200 m minimum.

- Where the first internal intersection along the Access Road is to be signalized, the offset distance shall under no circumstances be less than the 400 m minimum.

- Inbound through movement on an Access Road at a freeway ramp terminal shall have the right-of-way over other traffic movements at the first internal intersection.

- The exit ramp and Access Road designs shall meet sight distance requirements along their full length.

- Pavement markings shall be provided to identify the lane designations on the ramp.

- Overhead signs shall be provided for freeway exit ramps with three lanes or more leading to an Access Road.

- The projected average delay per vehicle for the inbound through movement shall not exceed that of the critical movement on the ramp (typically the left turns), such that an Adequate Level of Service “C” is maintained.

- The Access Road shall not have a closure gate.

4.5.2 Inbound Left Turn

As noted in Section 3.4 of this Appendix, an inbound left turn movement from the Connecting Road shall not be permitted into the Access Road.

4.5.3 Inbound Right Turn

As noted in Section 3.5 of this Appendix, an inbound right turn movement from the Connecting Road may be considered into the Access Road, provided the following criteria are met:

- The majority of inbound right turns are provided for at the Primary and Secondary Access connections rather than at the Access Road.
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- An Adequate Level of Service “C” shall be maintained for the inbound right turn movement at Primary and Secondary Access connections to minimize the right turn diversions to the Access Road.

- Should an exclusive right turn taper or lane be required, it shall terminate at the Access Road and shall not be continued through the intersection onto the Crossing Road.

- Advanced signing for the signalized intersection on the Crossing Road shall be provided.

4.5.4 Outbound Through Movement

As noted in Section 3.6 of this Appendix, an outbound through movement from the Access Road across the Crossing Road to a Freeway entrance ramp may be considered provided the following criteria are met:

- The outbound through movement shall align with the freeway entrance ramp on the opposite side of the Crossing Road.

- A separate phase shall be provided to accommodate outbound movements.

- The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Connecting Road.

- Elimination of the pedestrian crossing adjacent to and on the right of the outbound through movement shall be required. (This would require the approval of the local municipality and/or road authority; otherwise, the outbound through movement would not be approved by MTO.)

- Prohibiting outbound truck movements shall be considered to avoid delay to the critical movements.

4.5.5 Outbound Left Turn

As noted in Section 3.7 of this Appendix, an outbound left turn movement is not permitted from the Access Road onto the Connecting Road.

4.5.6 Outbound Right Turn

As noted in Section 3.8 of this Appendix, an outbound right turn movement from the Access Road may be considered provided the following criteria are met:

- The outbound right turn movement shall turn into a through lane on the Connecting Road.
• The outbound right turn shall be controlled by the traffic signals (i.e. no channelized right turn).

• A “no right turn on red” prohibition shall be considered to avoid unexpected and conflicting movements in the intersection.

• The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Connecting Road.

• Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.

4.5.7 Secondary Access Connections on Connecting Road

The layout of a Buttonhook interchange (near side of the Crossing Road) typically results in limited spacing between the ramp terminal intersection and the Crossing Road intersection. This negates the possibility of a mid-block Primary Access connection due to left turn storage requirements for the Crossing Road intersection. Left turn movements at a Primary Access connection typically require a left turn lane and, potentially, traffic signals. With existing traffic signals and turning lanes at the ramp terminal and Crossing Road intersection, the introduction of a Primary Access connection between them would result in significant traffic servicing issues, should the Primary Access connection also require traffic signals and/or turning lanes.

To avoid potential safety and operational problems, consideration for an access into the development along the Connecting Road between the ramp terminal and Crossing Road intersection shall be restricted to a Secondary Access connection. Inbound / outbound left turns from the Secondary Access connection along the Connecting Road between the ramp terminal and Crossing Road intersection shall be prohibited. The necessary intersection design elements and turning prohibition signs shall be provided for driver compliance with this restriction.

This access arrangement ensures the majority of turning movements in and out of the development occur away from the already complex operations of the interchange. The overall development site plan shall ensure that the Primary Access connection(s) are designed to service the development traffic from the municipal road system and not from the Connecting Road.

Secondary Access connections on a Connecting Road may be considered provided the following criteria are met:

• Confirmation exists that there is a need for a Secondary Access connection on the Connecting Road.

• Sufficient separation distance exists between the ramp terminal intersection and the Crossing Road intersection to consider a Secondary Access connection.
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- Necessary intersection design elements and turning prohibition signs shall be provided to prohibit inbound / outbound left turns.

- Should the Connecting Road be designated as a controlled-access highway under the control and jurisdiction of MTO, a Secondary Access connection shall be prohibited.

4.6 Parameters for Access Roads at Freeway Ramp terminals – Buttonhook Interchanges (Far Side of Crossing Road)

An Access Road at a Buttonhook interchange (far side of Crossing Road) may be considered if the freeway ramp geometry and operations meet or exceed the design standards of MTO. See Figure 6 for a generic diagram showing potential access and egress movements for an Access Road at a Buttonhook interchange (near side of Crossing Road).

For a standard Buttonhook interchange the following shall be considered:

- The freeway exit ramp would require adequate sight distances, appropriate lane configuration and adequate storage lengths for all traffic movements, including the additional Access Road traffic.

- The high right turn rate from the freeway exit ramp onto the Connecting Road conflicts with the Access Road outbound left turn movement.

- The limited spacing between the ramp terminal intersection and the Crossing Road intersection negates the possibility of an inbound left turn lane for an Access Road, due to left turn storage requirements for the Crossing Road intersection and freeway exit ramp (overlapping left turn lanes). An inbound left turn lane for an Access Road shall not be permitted.

- The limited spacing between the ramp terminal intersection and the Crossing Road intersection negates the possibility of a mid-block Primary Access connection, due to left turn storage requirements for the Crossing Road intersection and freeway exit ramp (overlapping left turn lanes).

- Where these requirements are not met, upgrading of the ramp would be required by the Proponent to allow for an Access Road at the freeway ramp terminal.

In addition, the following individual turning movement parameters shall be addressed.
4.6.1 Inbound Through Movement

As noted in Section 3.3 of this Appendix, an inbound through movement from the exit ramp may be considered into the Access Road, provided the following criteria are met:

- An exclusive lane(s) shall be provided for the through movement on the ramp that aligns with the inbound through movement of the Access Road.
- The offset distance from the Crossing Road to the first internal intersection within the site shall not be less than 400 m desirable / 200 m minimum.
- Where the first internal intersection along the Access Road is to be signalized, the offset distance shall under no circumstances be less than the 400 m minimum.
- Inbound through movement on an Access Road at a freeway ramp terminal shall have the right-of-way over other traffic movements at the first internal intersection.
- The exit ramp and Access Road designs shall meet sight distance requirements along their full length.
- Pavement markings shall be provided to identify the lane designations on the ramp.
- Overhead signs shall be provided for freeway exit ramps with three lanes or more leading to an Access Road.
- The projected average delay per vehicle for the inbound through movement shall not exceed that of the critical movement on the ramp, such that an Adequate Level of Service “C” is maintained.
- The Access Road shall not have a closure gate.

4.6.2 Inbound Left Turn

As noted in Section 3.4 of this Appendix, an inbound left turn movement from the Connecting Road shall not be permitted into the Access Road.

4.6.3 Inbound Right Turn

As noted in Section 3.5 of this Appendix, an inbound right turn movement from the Connecting Road may be considered into the Access Road, provided the following criteria are met:

- The majority of inbound right turns are provided for at the Primary and Secondary Access connections rather than at the Access Road.
• An Adequate Level of Service “C” shall be maintained for the inbound right turn movement at Primary and Secondary Access connections, to minimize the right turn diversions to the Access Road.

• Should an exclusive right turn taper or lane be required, it shall terminate at the Access Road and shall not be continued through the intersection onto the Crossing Road.

• Advanced signing for the signalized intersection on the Crossing Road shall be provided.

4.6.4 Outbound Through Movement

As noted in Section 3.6 of this Appendix, an outbound through movement from the Access Road across the Crossing Road to a Freeway entrance ramp may be considered provided the following criteria are met:

• The outbound through movement shall align with the freeway entrance ramp on the opposite side of the Crossing Road.

• A separate phase shall be provided to accommodate outbound movements.

• The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Connecting Road.

• Prohibiting outbound truck movements shall be considered to avoid delay to the critical movements.

4.6.5 Outbound Left Turn

As noted in Section 3.7 of this Appendix, an outbound left turn movement is not permitted from the Access Road onto the Connecting Road.

4.6.6 Outbound Right Turn

As noted in Section 3.8 of this Appendix, an outbound right turn movement from the Access Road may be considered provided the following criteria are met:

• A “no right turn on red” prohibition shall be considered to avoid unexpected and conflicting movements in the intersection.

• The necessary phasing shall be provided while maintaining an Adequate Level of Service “C” for both the freeway exit ramp and the Connecting Road.

• Prohibiting truck outbound movements shall be considered to avoid delay to the critical movements.
4.6.7 Secondary Access Connections on Connecting Road

The layout of a Buttonhook interchange (near side of Crossing Road) typically results in limited spacing between the ramp terminal intersection and the Crossing Road intersection and negates the possibility of a mid-block Primary Access connection, due to left turn storage requirements for the Crossing Road intersection. Left turn movements at a Primary Access connection typically requires a left turn lane and, potentially, traffic signals. With existing traffic signals and turning lanes at the ramp terminal and the Crossing Road intersection, the introduction of a Primary Access connection between them would result in significant traffic servicing issues, should the Primary Access connection also require traffic signals and/or turning lanes.

To avoid potential safety and operational problems, consideration for an access into the development along the Connecting Road between the ramp terminal and the Crossing Road intersection shall be restricted to a Secondary Access connection. Inbound / outbound left turns from the Secondary Access connection along the Connecting Road between the ramp terminal and Crossing Road intersection shall be prohibited. The necessary intersection design elements and turning prohibition signs shall be provided for driver compliance with this restriction.

This access arrangement ensures that the majority of turning movements in and out of the development occur away from the already complex operations of the interchange. The overall development site plan shall ensure that the Primary Access connection(s) are designed to service the development traffic from the municipal road system and not from the Connecting Road.

Secondary Access connections on a Connecting Road may be considered provided the following criteria are met:

- Confirmation exists that there is a need for a Secondary Access connection on the Connecting Road.
- Sufficient separation distance exists between the ramp terminal intersection and the Crossing Road intersection to consider a Secondary Access connection.
- Necessary intersection design elements and turning prohibition signs shall be provided to prohibit inbound / outbound left turns.
- Should the Connecting Road be designated as a controlled-access highway under the control and jurisdiction of MTO, a Secondary Access connection shall be prohibited.
5.0 SUBMISSION REQUIREMENTS FOR FEASIBILITY STUDY REPORTS (FSR) FOR ACCESS ROADS AT FREEWAY RAMP TERMINALS

The approval process for an Access Road requires a thorough analysis of the safety, design, and operational issues at the freeway interchange. The key component of the approval process is the submission of a Feasibility Study Report (FSR). To ensure MTO is provided with the necessary information needed to consider approval of an Access Road, the FSR submission requirements are detailed below.

The Proponent shall prepare and submit an FSR for MTO approval to establish a business case for the Access Road. The focus of the FSR shall be the existing and future traffic operations at the interchange. In addition, the consideration of a proposed Access Road at a freeway ramp terminal depends primarily on the existing configuration of the freeway interchange and future expansion needs. The FSR shall analyze traffic impacts “with” and “without” the proposed Access Road and shall address each proposed turning movement in accordance with the issues and conditions presented in this Appendix. The FSR shall be prepared by a consulting firm in accordance with MTO’s “General Guidelines for the Preparation of Traffic Impact Studies”. The consulting firm shall be approved under MTO’s consultant Registry, Appraisal and Qualification System (RAQS) under the Traffic Impact Analysis specialty category. In addition, the FSR shall be signed and stamped by a Professional Engineer registered in the Province of Ontario taking responsibility for the FSR contents.

The signal operations of the ramp terminal intersection(s) shall be modeled using an MTO approved computer signal timing optimization and simulation package to corroborate the permitted turning movements, level of service and queuing of each approach of the intersection. The traffic volumes used for the signal timing analysis shall be projected to MTO approved design years.

The FSR shall include a draft site plan to ensure that this Guideline and Appendix have been satisfied. The draft site plan shall show, at a minimum, the proposed upgrading of freeway ramps and municipal roadways, on-site circulation plans, and signing and illumination plans.

Gaining approval of an Access Road is contingent upon obtaining all required approvals, including but not limited to, MTO and municipal approvals. This includes either the assumption of the Access Road by the municipality or a maintenance agreement with respect to the Access Road between MTO and the municipality.

Should MTO endorse the FSR and approve the Access Road, MTO would require the Proponent and/or municipality to enter into a legal agreement with MTO, and be financially responsible for all associated highway improvements to accommodate the Access Road. The Proponent should reference MTO’s “Highway Improvements Associated with Land Development” guideline.
To obtain a copy of MTO’s “Highway Improvements Associated with Land Development” guideline, please contact the MTO Corridor Management Office closest to you (refer to section 4.1) or visit the MTO Corridor Management website:

## DEFINITIONS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Access Road</td>
<td>A proposed municipally owned and/or maintained road located across from a freeway entrance or exit ramp, thereby providing direct connection to and from the freeway.</td>
</tr>
<tr>
<td>Adequate Level of Service</td>
<td>Level of Service “C” as defined by the Highway Capacity Manual (HCM 2000).</td>
</tr>
<tr>
<td>Connecting Road</td>
<td>The road that connects from the end of Buttonhook ramps to the Crossing Road.</td>
</tr>
<tr>
<td>Critical Movement</td>
<td>Turning or through movement at a signalized intersection that controls the signal timing of that traffic signal.</td>
</tr>
<tr>
<td>Crossing Road</td>
<td>The intersecting road at a freeway interchange that is accessible to and from the freeway.</td>
</tr>
<tr>
<td>Primary Access (Full Movement)</td>
<td>The access(es) at a development or property that provides the main (Full Movement) or primary movement into the site and provides the full movements (i.e. all turns and through movements) from the adjacent road.</td>
</tr>
<tr>
<td>Secondary Access (Partial Movement)</td>
<td>The access(es) at a development or property that provides the secondary movement into the site and provides the partial movements (i.e. right-in / right-out turn movements) from the adjacent road. Inbound / outbound left turn movements are prohibited.</td>
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Figure 4 – Typical Parclo B-4 interchange
Figure 5– Typical Buttonhook interchange (Near Side)
Figure 6 – Typical Buttonhook interchange (Far Side)
Typical Parclo A-2 Interchange-Proposed Access Road Turning Movement Configuration

In a Parclo interchange where ramps do not exist in all quadrants, an Access Road or a freeway ramp terminal can be considered provided it can be physically accommodated without compromising future expansion needs.
Typical Parclo A-4 Interchange-Proposed Access Road (Grade Separation) Turning Movement Configuration

- Primary Access
- Proposed Primary or Secondary Access
- Development
- Municipal Road
- Crossing Road
- Proposed Access Road
- See Guideline for Offset Spacing
- 400m Desirable 200m Minimum
- Grade separation could be either over or under the Freeway Entrance Ramps

N.T.S.

FIGURE 2A
Typical Parclo B-2 Interchange-Proposed Access Road Turning Movement Configuration

In a Parclo interchange where ramps do not exist in all quadrants, an Access Road at a freeway ramp terminal can be considered provided it can be physically accommodated without compromising future expansion needs.
Typical Parclo B-4 Interchange-Proposed Access Road Turning Movement Configuration

- Grade separation could be either over or under the Freeway Exit Ramps

- Proposed Primary or Secondary Access

- See Guidelines for Offset Spacing

- 403m Desirable
  200m Minimum

- Primary Access

- Municipal Road

- Crossing Road

- Freeeway

N.T.S. FIGURE 4
Typical Buttonhook Interchange (near side) Proposed Access Road Turning Movement Configuration

Municipal Road

Primary Access

Development

Proposed Primary or Secondary Access

Proposed Secondary Access

Proposed Access Road

Connecting Road

400m Daiskella
200m Minimum

N.T.S.

FIGURE 5
Typical Buttonhook Interchange (far side) Proposed Access Road Turning Movement Configuration

FIGURE 6