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Memorandum

To/Attention	Municipality of Meaford	Date	2021-05-18
From	IBI Group	Project No	124140
cc			
Subject	Meaford Transportation Master Plan Policy Areas and Design Guidance		

1 Introduction

This memorandum forms the policy guidance section of Meaford’s upcoming Transportation Master Plan (TMP). Specifically, it outlines several policy areas relating to road design, road user safety and parking that Meaford requested direction on in scoping the TMP.

The following policy areas are discussed:

- Stop signs;
- One-way streets;
- Speed limits;
- Road safety;
- Community safety zones;
- Parking and accessible parking;
- Rural goods movement;
- Paving rural roads; and
- Road design and planning.

2 Stop Signs

Meaford occasionally receives requests for stop signs to be installed for perceived traffic operations, safety and traffic calming benefits. The following provides a review and policy direction for responding to these requests and examining stop sign needs in general.

Municipality of Meaford – May 18, 2021

Background Review

The Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs provides guidance on the use and installation of stop signs. It states that stop signs should only be installed as a last resort, after all other measures have been unsuccessful. If stop signs are liberally installed, it may lead to lower compliance by drivers that perceive the signs to be unwarranted. This can have safety impacts at the intersection, and at other intersections if adherence to signs in general are lower. The overuse of stop signs can also lead to negative impacts on traffic flow, which in turn may also lead to more aggressive driving behavior.

OTM Book 5 also provides guidance on topics such as locations where stop signs should not be implemented. Book 5 also contains warrants for stop signs on the minor approach as well as warrants for all-way stop controlled intersections. The all-way stop control warrant considers a combination of hourly traffic demand, pedestrian volumes, and the directional split of traffic demand.

OTM Book 5 also lists specific instances where all-way stop control is not appropriate, including:

- Where the protection of pedestrians, school children is a prime concern;
- As a speed control device;
- As a means of deterring the movement of through traffic in a residential area; and
- Where traffic would be required to stop on grades;

In these cases, concerns can usually be addressed by other means including pedestrian crossovers and traffic calming.

Most municipalities follow OTM guidelines for stop control warrants. The City of Hamilton is an example of a customized policy¹, which is based on OTM Book 5 but tailored slightly for local conditions, including a minimum spacing requirement and a minimum 50km/h posted speed.

Policy Recommendation

The Municipality of Meaford will apply OTM Book 5 to determine if a stop sign is warranted, prior to installation. This policy acknowledges that stop signs are not typically appropriate for use to protect pedestrians, as a speed control device, and as a means of deterring through traffic.

¹ Installation Policy for All-Way Stop Control at Intersections, City of Hamilton, 2001.
<http://www2.hamilton.ca/Hamilton.Portal/Inc/PortalPDFs/ClerkPDFs/committee-of-the-whole/2001/apr25/TOE01053.pdf>

Municipality of Meaford – May 18, 2021

Over time Municipal should consider monitoring and identifying locations with problematic all-way stop control. This could be through collision data monitoring (see safety policy) and through assessment and local knowledge. If a location with all-way stop control is identified as unnecessary, OTM Book 5 provides a methodology for removal of stop signs.

Meaford may, at their discretion, engage a traffic engineering consultant to assist with stop sign assessment.

3 One-Way Streets

There are no one-way streets in operation in Meaford. However, there are intersections that have limited sightlines for turning traffic. At these locations, converting one street to one-way operation and/or limiting turning movements may mitigate collision risk, though further analysis is required. The intersections identified through the TMP that fit these criteria are:

- Sykes Street & Berry Street,
- Sykes Street & Boucher Street, and
- Sykes Street & Ford Ave.

Additionally, Miller Street, east of County Road 12 has been identified as having potential to be converted to one-way operation to reduce conflicts between drivers and other road users caused by the narrow right-of-way and other safety concerns presented by the grade of the corridor and the proximity of the Bighead River.

In more general terms, one-way streets tend to have higher through-traffic capacity than two-way streets due to reduced turning movement conflicts at intersections.

Background Review

Converting a two-way street to a one-way street (or vice versa) has been used by road authorities to address traffic operation and safety issues. The Association for Commuter Transportation of Canada developed a discussion paper with a detailed assessment of the advantages of one-way and two-way street networks relating to Ottawa's Downtown Moves study², as summarized in Exhibit 3.1.

² Discussion of Potential One-Way Street Conversions in Downtown Ottawa, Association of Commuter Transportation, 2013. <https://www.actcanada.com/docs/default-source/act-canada-summit-2013/one-way-street-conversion-discussion-paper.pdf?sfvrsn=2>

Municipality of Meaford – May 18, 2021

Exhibit 3.1: Advantages of One-Way and Two-Way Streets

Road Type	Advantages
One-Way Street	<ul style="list-style-type: none"> • Narrower street cross-section; • Improved signal coordination; • Increased capacity; • Reduced congestion and delay; and • Improved pedestrian safety at intersections.
Two-Way Street	<ul style="list-style-type: none"> • Decreased vehicle distances travelled; • Slower travel speeds; • Improved pedestrian (and cyclist) safety through reduced travel speeds; and • Supporting street-oriented land uses.

When considering changing a two-way street to a one-way street, Municipal should assess the traffic impacts of diverting the drivers that typically travel in the direction being prohibited. The traffic operational impacts of traffic diverted along parallel roadways should be examined to determine if the adjacent road network could accommodate the additional traffic without causing new operational constraints.

Another consideration when changing a roadway from a two-way to a one-way street is the resultant right-of-way width. For example, if a two-way street is currently 10 metres wide, and is changed to a one-way street, that the resulting road may appear to be very wide and open. This may lead to vehicle operating speeds increasing, thereby increasing the severity of potential collisions. Special care should be taken to ensure that the proposed design and geometry limits the potential for wide cross-sections or lanes. This can be achieved through allocating additional space to active transportation facilities, implementing on-street parking, or other geometric controls. OTM Book 5 contains guidance on one-way and associated “Do Not Enter” signage to safely change the road from a two-way street to a one-way street.

The City of Hamilton developed a policy paper³ to help provide policy direction and aid in the decision-making process of converting one-way streets to two-way streets. It included a list of criteria that could also be applied for converting two-way streets to one-way streets. Some factors included in the criteria for consideration are traffic count, street classification, speed, collisions, land uses, transit services, pedestrian and cyclist facilities, and impact on the health, safety, and livability of the communities.

³ Background Report: Street (One- to Two-Way) Conversions, City of Hamilton.
<https://www.hamilton.ca/sites/default/files/media/browser/2018-06-06/draft-tmp-backgroundreport-streetconversion-8.pdf>

Municipality of Meaford – May 18, 2021

Policy Recommendation

One-way streets will only be considered through a comprehensive assessment of safety implications for all modes of travel (walking, cycling, and traffic), operations study assessing overall impact of diverted traffic and impact of gain or loss of access and convenience for residents and businesses.

4 Speed Limits

In Meaford the maximum speed limit is 50 km/h for urban streets and 80 km/h for rural roads unless otherwise posted, which follows Ontario provincial norms and Highway Traffic Act default speed limits. There are a small number of locations where the speed limit deviates from the default, around the existing school (i.e. St. Vincent St, Eliza St and Aiken St) as well as some rural roads where conditions necessitate a lower speed limit (e.g. Cedar Ave, 4th Side Road and Georgian Beach Rd).

Meaford frequently hears concerns from residents about speeding traffic, which points to several considerations relevant to the TMP including traffic calming, design standards, safety, collision history, and speed limits. There are also some roads that may be signed / posted inappropriately. However, Meaford does not currently have a process in place to assess the appropriateness of the existing speed limits or to set new speed limits. The following provides a review and guidance of how speed limits should be set and a formalized policy for setting and updating speed limits.

Background Review

Speed limits give expectations to drivers, and properly-set speed limits provide a safe, consistent, and reasonable speed to protect all road users. Statutory speed limits are generally established by legislatures or by-laws for different types of roads, while posted speed limits include signs posted at corridors where the speed limit is different than the statutory speeds.

Establishing Corridor Specific Speed Limits

For establishing recommended speed limits on specific roads, the Transportation Association of Canada's (TAC) Canadian Guidelines for Establishing Posted Speed Limits provides guidance on setting appropriate speed limits based on the road classification, function, and physical characteristics of a roadway. The guidelines consider factors including land uses (i.e., rural or urban), road classification, median treatment (i.e., undivided, divided), number of lanes, design speed or existing posted speed, horizontal and vertical alignment, lane width, roadside hazards, pedestrian and cyclist exposure, pavement surface condition, intersection and access density, and on-street parking. These factors are used to calculate a risk score and

Municipality of Meaford – May 18, 2021

recommended posted limit. An example of the TAC Automated Speed Limit Guideline tool is presented as Exhibit 4.1.

Meaford has collected average and 85th percentile speed data for all road segments in Meaford. These speeds were compared to the posted speed limits to identify where operating speeds do not align with posted speeds. This is summarized in Exhibit 4.2 and displayed in Exhibit 4.3. Discrepancies may indicate incompatibilities between the design of the roadway and the desired operating speeds. Roads where 85th percentile speeds exceed posted speed limits by 15 km/h or more pose increased risk of serious collisions. Within the transportation industry, 85th percentile speeds are regarded as the speeds at which a reasonable driver would feel comfortable driving at.

Rural Hamlet Speed Limits

Though the default rural speed limit is 80 km/h, there are numerous locations in rural Meaford where lower speeds are desirable. These include instances where road geometries necessitate lower speeds for the safe operation of vehicles (e.g. Cedar Ave, 4th Side Road and Georgian Beach Rd) as well as where rural hamlets are located.

Where the presence of homes and other land uses increase the intensity of activity lower speed limits may be desired. Currently, the Municipality lowers speed limits on an ad hoc basis. This should continue, with the input of the Transportation Association of Canada's (TAC) Canadian Guidelines for Establishing Posted Speed Limits providing guidance. The TMP's recommended Road Classification system notes that typical rural local roads can be signed as low as 40 km/h where desired.

Without physical changes to the roadway's design, however, compliance of such low speed limits may be low. These locations may be candidates for traffic calming interventions.

Municipality of Meaford – May 18, 2021

Exhibit 4.1: TAC Automated Speed Limit Guidelines Tool

		Automated Speed Limit Guidelines		Version: 10-Apr-09
		FORM A - Automated Speed Limit Guidelines Spreadsheet		
Name of Corridor:	Bayfield Street			
Segment Evaluated:	N Sykes Street	to	Bridge Street	
Geographic Region:	Meaford			
Road Agency:	Municipality of Meaford			
Road Classification:	Local	Length of Corridor:	645	m
Urban / Rural:	Urban	Design Speed: (Required for Freeway, Expressway, Highway)		km/h
Divided / Undivided:	Undivided	Current Posted Speed: (For information only)	50	km/h
Major / Minor:	Major	Prevailing Speed: (85th Percentile - for information only)		km/h
# Through Lanes Per Direction:	1 lane	Policy: (Maximum Posted Speed)	50	km/h

	RISK	Score
A1	GEOMETRY (Horizontal)	Medium 2
A2	GEOMETRY (Vertical)	Lower 1
A3	AVERAGE LANE WIDTH	Medium 4
B	ROADSIDE HAZARDS	Medium 2
C1	PEDESTRIAN EXPOSURE	Lower 3
C2	CYCLIST EXPOSURE	Higher 9
D	PAVEMENT SURFACE	Lower 1
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	<i>Number of Occurrences</i>
	STOP controlled intersection	
	Signalized intersection	
	Roundabout or traffic circle	
	Crosswalk	3
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS	<i>Number of Occurrences</i>
	Left turn movements permitted	14
	Right-in / Right-out only	
E3	NUMBER OF INTERCHANGES	<i>Number of Occurrences</i>
	Number of interchanges along corridor	0
F	ON-STREET PARKING	Higher 9

Calculate Total Risk Score

Total Risk Score:

47

Posted Speed Limit (km/h):

As determined by road characteristics

40

As determined by policy

50

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

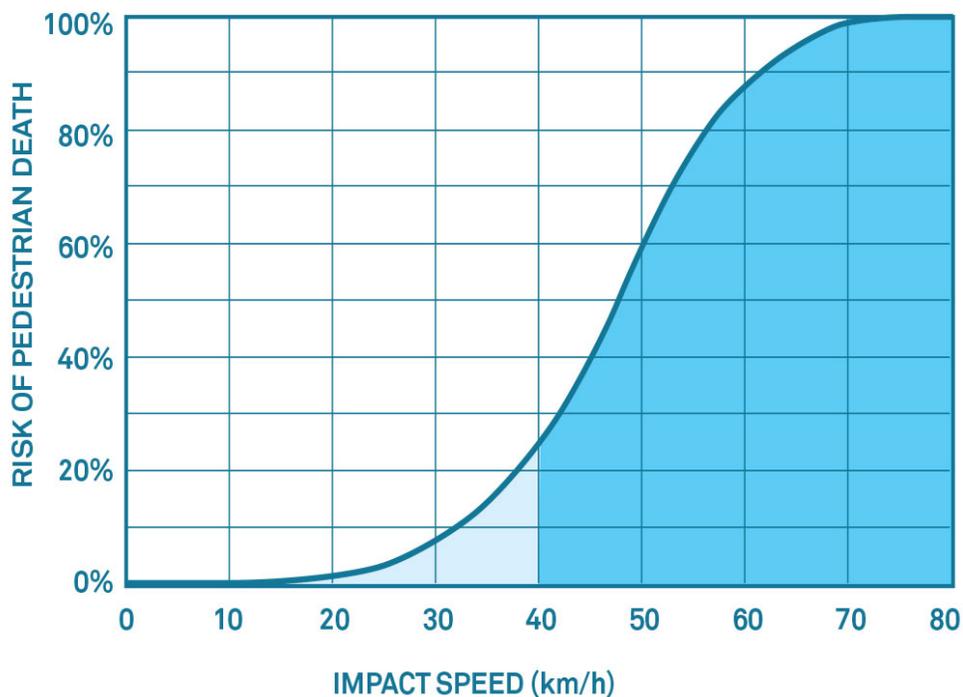
Comments:

Municipality of Meaford – May 18, 2021

Lowering the Default Urban Speed Limit

In recent years there has been interest in some Ontario municipalities in lowering urban speed limits to 40 km/h. A preliminary scan of news media shows that in recent years the Town of Orangeville and the Town of Prescott have passed municipal bylaws to implement a 40 km/h default urban speed limit, the City of Hamilton has lowered speed limits to 40 km/h on all local and minor collector streets, and other municipalities have considered it, are reviewing speed limits currently, or are proposing it for upcoming years. There is well documented evidence that a reduction in travel speed below 50 km/h (e.g. 30 km/h or 40 km/h) drastically increases survivability of pedestrian-vehicle collisions. This is shown in Exhibit 4.4 However, reducing the speed limits alone will not always result in lower operating speeds.

Exhibit 4.4: Relationship Between Impact Speed and Risk of Pedestrian Death.



Source: Global Street Design Guide (NACTO, Global Designing Cities Initiative, 2013)

Policy Recommendation

To improve safety for all road users, a key TMP objective, it is recommended that Meaford consider a reduced 40 km/h default speed limit within the urban area. A reduced default speed limit would be illustrated through ‘blanket’ speed limit signage on entry to Meaford and at strategic locations. This would require a separate process to update the by-law and bring the change through Meaford Council.

Municipality of Meaford – May 18, 2021

If the political process to lower the default speed limit is unsuccessful or deferred, the following policies outline how speed limits will be set and reviewed:

- Speed limit reviews on existing rural roads (or urban roads if a default speed of 40 km/h is not adopted) will be undertaken on an individual basis following provincial guidelines and industry best practices. Locations where there are major discrepancies between posted and operating speeds are identified or locations where speed limit change requests are received should be monitored and assessed for speed limit changes and prioritized through the safety / collision monitoring program identified in the TMP.
- Speed limits on new roads in Meaford will be set or modified according to TAC guidelines and methodology and be consistent with the guidelines set out in the Road Classification system.

5 Safety

Safety is a major concern and emphasis of the Municipality of Meaford and improving safety for all modes of travel is a core part of the Transportation Master Plan. Implementing safety-related improvements can be costly necessitating an approach that assesses severity of problems and prioritizes improvements based on cost and benefit. The theme of safety is addressed throughout the TMP, including the traffic calming policy and procedure, active transportation networks and strategies, and other policies covered in this document.

Safety is a consideration in Meaford's transportation planning and engineering, however there is no formal, ongoing monitoring program to inform this decision-making. This section outlines the guiding policy along with a series of actions designed to be undertaken utilizing existing staffing and resources. Together, they comprise a road safety monitoring program that will help to identify and prioritize issues and provide input into the decision-making regarding capital spending on mitigating these issues.

Policy Recommendation

Safety for all road users is Meaford's first priority in managing and planning its transportation network.

Road Safety Monitoring

Though collisions are tracked by the Ontario Provincial Police, these data are not part of an ongoing process to assess and improve the safety of Meaford's roads and streets. Tracking collision frequency and severity can help identify areas where safety improvements are most needed and can provide insight into

Municipality of Meaford – May 18, 2021

the types of alterations needed to be made. For a safety monitoring program to be effective, it must become an ongoing concern for municipal staff.

The monitoring program outlined below is intended to get Meaford to the point where they can routinely identify problem locations and assess whether additional actions should be taken to mitigate the issues, including potential capital work. The monitoring program is made up of the following ongoing tasks and actions.

- The Municipality will immediately request from OPP collision data for the previous five years and continue to request updated data on an annual basis.
- Using this data, Meaford will identify intersections and mid-block locations with the most collisions (i.e. more than ten collisions in prior five years).
- Coordinate and cross check problem locations with speed limit assessment, stop signs, community safety zones, road design and planning criteria as outlined in the respective TMP policies. Take appropriate action to mitigate issues according to these policies and processes.
- If larger capital works are required, schedule into the road improvement program and capital budget planning processes and prioritize accordingly.
- Report to council findings once per year.

6 Community Safety Zones

In the past, Meaford had designated many Community Safety Zones (CSZ) across the municipality. Enforcement constraints have limited the ability to enforce these zones, however, as the Ontario Provincial Police have identified that through their contract with Meaford, are only capable of enforcing two CSZs. In more recent years, Meaford has reduced the number of CSZs to a single location, surrounding the Georgian Bay Community School. As of June 2021, however, the school will no longer be operation as students will move to a new location at Sykes St and County Road 7. As the new school will be on a county road, Meaford will have to work with Grey County to consider a new Community Safety Zone.

Meaford does not currently have an internal process for assessing potential locations for Community Safety Zones. This section is intended to provide a review of considerations relating to CSZ designations and identifies a policy to assess and implement CSZs moving forward. Additionally, there is a discussion regarding automated speed enforcement (ASE), which was recently permitted by the Ontario government within CSZs, as a potential alternative to traditional policing. Background Review

Municipality of Meaford – May 18, 2021

Community Safety Zones (CSZ) are designated roadway sections recognized under the Highway Traffic Act to allow fines associated with speeding offences to be doubled. CSZs are intended to help influence a change in driver behaviour and to improve safety. CSZs are typically designated at locations which have safety concerns or complaints, or near sensitive areas such as schools, day-care centres and retirement homes, where the presence of vulnerable road users is more likely.

CSZ designations can only take effect after municipal by-laws are in place and regulatory signs are posted. Signs are typically posted at the limits of the zone with “Begins” and “Ends” tabs defining the legal limits of the zone. OTM Book 5 provides guidance on the appropriate signage to be used.

There is no one resource to provide guidance on assessing the appropriateness of a CSZ. Municipalities are left to develop their own warrants and criteria. One example is York Region, which has developed Community Safety Zone Installation Guidelines⁴, adopting its own criteria for the implementation of CSZ, as summarized in Exhibit 7.1. York Region’s current CSZ warrant criteria consider both the need for special consideration and the designation’s potential to improve safety performance - both warrants must be met to install a CSZ.

Exhibit 6.1: York Region CSZ Warrant Criteria

Criteria	Consideration
Designated Areas of Special Consideration	<ul style="list-style-type: none"> • Community centres • Elementary or secondary schools • High pedestrian traffic locations (100 pedestrians or more for any eight hours of the day) • Seniors’ centres and residences
Safety Performance	<ul style="list-style-type: none"> • Posted speed • Daily traffic volumes • Number of lanes • Length of sidewalks • Pedestrian volumes • Intersections and accesses per kilometre

Niagara Region also considers the number of safety and speeding complaints, percentage of students and families walking to and from school, speeding study results, and number of violation occurrences when choosing a site for CSZ designation.

One drawback with having a standard set of CSZ warrant criteria is the possibility that drivers who face penalties for driving infractions in a CSZ may

⁴ Community Safety Zone Installation Guidelines, York Region.
<http://archives.york.ca/councilcommitteearchives/pdf/rpt%204%20cls%203-15.pdf>

Municipality of Meaford – May 18, 2021

more easily challenge a ticket. Another drawback is that residents of Meaford County may use the warrants to justify a need for a CSZ in their neighbourhood, leading to more CSZs than could effectively be enforced. Consequently, cities, such as the City of Toronto and City of Ottawa, choose to deal with CSZs on a case-by-case level, rather than having a standard set of CSZ warrant criteria.

Enforcement resources must be taken into consideration when determining the effectiveness, size, and location of a CSZ as well, since they require active enforcement to be effective. In addition, overuse of CSZ designation could become counter-productive to the goal of changing driver behaviour and improving traffic safety.

Given the scarcity of enforcement resources, a case-by-case approach to Community Safety Zones is recommended for Meaford. The Municipality can tailor the number of CSZs to available enforcement resources and operations funding rather than having to adhere to specific warrant criteria.

Automated Speed Enforcement

One of the biggest issues with CSZs in Meaford in the past has been that limited enforcement resources have been stretched thin. Traditional policing can be expensive and comes with its own constraints and challenges.

The Province of Ontario has recently passed regulations allowing municipalities to operate an Automated Speed Enforcement (ASE) program (also known as speed cameras). ASE is an automated system that uses a camera with a speed measurement device to detect and capture images of vehicles travelling faster than the posted speed limit. Images are reviewed by Provincial Offence Officers and then tickets are issued to the owner of the vehicle.

ASEs have been shown to be effective in reducing speed and reducing collisions but can be politically unpopular. Warning signage, awareness campaigns and/or pilot periods are recommended if the Municipality chooses this option. Speed cameras can be relocated with a proper warning period. For example, the City of Toronto has recently purchased 50 ASE devices and are rotating them between school zones across the city and monitoring their effectiveness.

Utilizing ASEs can help mitigate the costs of police enforcement but do come with their own operating costs. In Toronto, it is estimated that each camera costs \$50,000 to operate per year⁵. In Barrie, where a 2-camera pilot is set to begin in

⁵ Controversial rollout of speed cameras in Toronto marred by vandalism, theft.

<https://www.theglobeandmail.com/canada/toronto/article-controversial-rollout-of-speed-cameras-in-toronto-marred-by-vandalism/>

Municipality of Meaford – May 18, 2021

2021, the City estimates an annual operating cost of \$70,000 to \$80,000⁶. Operating costs can be offset by revenue received through the program.

Partnering with Grey County and/or other Ontario municipalities is recommended for an ASE program. Partnerships can help achieve economies of scale in leasing or purchasing ASE equipment and administering the program.

Policy Recommendation

Community Safety Zones will be assessed on a case-by-case basis and will be informed by Meaford's Road Safety Monitoring Program and coordinated with other safety-related initiatives.

- Meaford will coordinate Community Safety Zone enforcement with OPP
- Meaford will explore partnerships to consider implementing Automated Speed Enforcement.

7 Parking and Accessible Parking

On-street and off-street parking is provided in the Downtown Core Commercial Area. There are two municipal parking lots accounting for 117 parking spaces including 2 accessible spaces. There are also 205 on-street spaces, including 6 accessible spaces.

However, there has been growing concern in Meaford about whether the supply of parking meets the community's needs now and into the future. Additionally, increased interest in residential units in the downtown core where on-site parking is not available has created a conflict with existing parking by-laws, which do not permit overnight winter parking. With the nature of parking needs changing, Meaford should review its existing parking by-laws across the Municipality.

The Municipality also receives occasional complaints about parking issues relating to accessing many of Meaford's rural amenities such as trail heads and conservation areas.

Background Review

Parking is an integral element of the trip-making process. When people plan where, when, and how they travel, they are often responding to the provision of parking near their destination. Providing the appropriate amount of parking

⁶ Candid cameras coming to Barrie streets? Photo radar takes another step forward.
<https://www.barrietoday.com/local-news/candid-cameras-coming-to-barrie-streets-photo-radar-takes-another-step-forward-3165063>

Municipality of Meaford – May 18, 2021

supply is a factor in fostering economic growth and producing lively, vibrant urban areas. The availability of parking opportunities in urban areas are needed to encourage visitors to support local businesses. Conversely, if too many parking facilities (off-street surface lots or parking structures) are provided, it detracts from the livelihood of the urban area. The space that could be used to build new businesses, or expand existing ones are occupied by underused parking facilities.

Typically, a parking facility is considered effectively utilized when 85% to 90% of the parking spaces are occupied during peak periods, this target results in each parking facility to have some parking spaces available for visitors. If all parking spaces are full, it will result in drivers cruising in search of a parking space, which contributes to congestion and greenhouse gas emissions.

If parking demand is found to exceed the supply, there are several strategies that should be considered before a parking expansion. Parking supply expansion can be extremely costly, and as such should be only considered as a last resort. Some strategies or measures commonly implemented by municipalities to reduce parking demand are outlined below:

- **Travel Demand Management:** Encourage travel by other modes such as cycling, walking, transit and carpooling through policies, incentives and programs. Possible strategies include investing in bicycle parking and cycling infrastructure and designating carpool spaces in desirable locations within highly-utilized parking lots.
- **Shared Parking Provisions:** The shared access of one parking facility by more than one land use, taking advantage of different parking demand patterns by time of day to reduce the total amount of parking area that would have been required if facilities were not shared. These are applicable to plazas or developments where there are multiple land uses. Consider updating the Zoning By-Law to include shared parking provisions.

Overnight Parking

Overnight parking (between 2:00 AM and 6:00 AM) during winter months (November 15 to April 1) is mostly prohibited in Meaford to allow for winter maintenance activities. The Market Square parking lot, however, does have designated overnight parking spots available to residents that obtain passes from the Municipality. There is a growing need for more overnight parking to better accommodate urban area residents, particularly in mixed-use buildings in the downtown core where on-site parking is not available.

Many Ontario municipalities ban overnight on-street parking during the winter months, with some exceptions. For example, Toronto only bans overnight on-street parking along designated snow removal routes. London has a year-round overnight parking registry that allows residents to apply for overnight parking permits that are only valid if winter maintenance activities are not expected to be

Municipality of Meaford – May 18, 2021

required; an online portal advises residents if the passes are valid or not. The Town of Orangeville has designated various parking lots that serve public parks for overnight parking during winter months when on-street parking is prohibited.

Accessible Parking

The existing barrier-free parking space requirements for off-street parking facilities outlined within the Municipality of Meaford's Zoning By-Law (ZBL) 60-2009 align with the AODA regulations. The ZBL outlines the number of barrier-free parking spaces required, and differentiates between Type A (larger, van accessible spaces), and Type B parking spaces (similar size to a typical parking space but is designated as accessible). These standards should be maintained.

While the barrier-free parking space requirements are clearly outlined for off-street facilities as part of the AODA regulations, the requirements for the provision of on-street is left to the discretion of the municipality. The AODA outlines that decisions related to the locations of accessible on-street parking spaces should be considered based on discussions with the general public and persons with disabilities. The AODA also suggests that municipalities consult with their respective Accessibility Advisory Committees to determine the number and location of accessible on-street parking spaces based on the surrounding land uses. Common areas that are accessed regularly by the general public (e.g. clinics, post offices, senior homes, libraries, etc.) are good candidates where the provision of on-street accessible parking spaces would provide the greatest benefit.

Parking Study

To address known parking issues in downtown Meaford, it is recommended that the Municipality conduct a parking master plan study to assess whether the existing parking supply meets existing and future parking needs through parking occupancy surveys. Parking surveys typically examine the parking operations in the urban area, examining the municipal parking supply for both on-street and off-street facilities to determine the overall parking utilization, and can also identify areas where parking demand may be approaching capacity. A parking master plan can also consider the impacts that population growth, urban development, and future mode share targets will have on future parking demand and provide long-term strategic recommendations to accommodate the forecasted demand.

Reduced Minimum Parking Requirements

It is commonplace for Municipalities to require, through the Zoning By-Law, new developments to provide a certain number of off-street parking spaces based on criteria such as planned land use, gross floor area, bedrooms, etc. However, there is a growing trend and growing research that suggests parking minimums typically result in an oversupply of parking that promotes driving, reduces

Municipality of Meaford – May 18, 2021

walkability by forcing homes and businesses further apart, increases the cost of housing or commercial rent⁷.

Eliminating or reducing minimum parking requirements allows the market to determine the number of parking spaces most desirable based on existing supply and demand. This can remove undue constraints faced by developers and help spur growth in the Municipality.

Reducing or eliminating parking minimums within the downtown core or urban area should be explored for Meaford's next Zoning By-Law update.

Further Study Recommendation

Meaford should engage a consultant to undertake a parking master plan study that:

- Reviews and updates of all pertinent by-laws, including an assessment of the possibility of removing or reducing off-street minimum parking requirements for new developments in all or some parts of Meaford, and
- Assesses on- and off-street parking supply and demand within the downtown core area.

Policy Recommendation

Accessible parking will be provided according to AODA guidelines. The Accessibility Advisory Committee should be consulted regularly to ensure supply continues to match the needs of the community.

Meaford supports the provision of safe parking at rural amenity locations in the longer term. The Municipality will consider measures to improve parking, including reaching out to the owners of lands adjacent to trailheads and other attractions or widening the road base to provide shoulder parking. In a future trails study, parking should be considered further.

8 Rural Goods Movement

Farmers moving agricultural goods and equipment by truck can experience difficulties operating on local roads. The Niagara escarpment geography means many roads have steep gradients, tight turns, and narrow road widths. The road network can have gaps requiring circuitous routes, and maintenance of roads can be a challenge for Meaford due to weather and wear and tear on the road surface. Further complicating goods movement are the aging bridges and culverts, some of which require rehabilitation and maintenance and others which

⁷ Strong Towns: Ending Parking Minimums. <https://www.strongtowns.org/parking>

Municipality of Meaford – May 18, 2021

do not meet current standards – and the lack of funding in Meaford to address these deficiencies.

The current TMP has developed a series of policies and actions to support rural goods movement:

- Part of the needs assessment of this TMP has resulted in the proposed road classification system, which introduces collector roads in the rural area. These collector roads are intended to provide greater service levels to rural goods movement and should be a priority for surface type and maintenance.
- Another task of the TMP has been to review bridges and culverts, with this review resulting in two outputs: first, a maintenance prioritization methodology; and second, a review of bridges identified as candidates for closure by Meaford. Both of these outputs are actions that can affect rural roads with the goal of maintaining service levels within available funding.
- The road surface task, with consideration for paving rural roads, emphasizes that traffic volumes are not the sole criteria for paving but network connectivity, isolation, and drainage needs are also important considerations.

In addition to the above, consultation during the TMP included feedback from rural residents that some roads are very important for goods movement, despite having extremely low traffic volumes. An example is Holland-Sydenham Townline, which was closed west of Grey Road 29 by Meaford due to unsafe bridges. Agricultural vehicles were using the road, Grey Road 29, Side Road 3 and Side Road 4, and 11 Line, to access Euphrasia St-Vincent Townline. On initial review, the closure was possible as traffic has available alternative routes such as Concession Road 2 South, however feedback from the public demonstrated that these alternatives are difficult to use for agricultural goods due to tight turns and steep gradients.

Based on the feedback received, the bridge closure task identifies a need to consult with adjacent landowners before permanently closing roads and bridges to ensure similar issues are not present or can be mitigated (e.g. through maintenance of alternative routes). Another policy direction for Meaford is to prioritize maintenance of rural roads considering rural goods movement and isolation. Aligning with this goal, dedicated capital funding for upgrading of rural local roads is recommended.

Policy Recommendations

Road surface and maintenance should continue to be based on traffic volumes, however the municipality should also recognize any local roads that serve important goods movement functions.

Municipality of Meaford – May 18, 2021

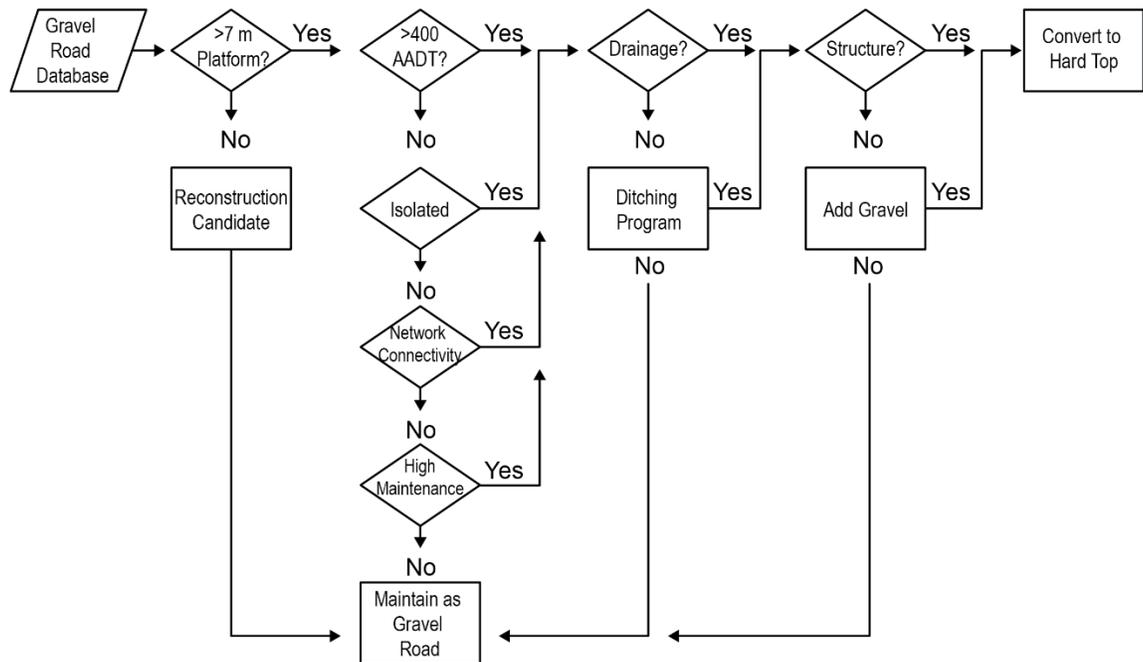
Meaford should thoroughly assess bridge closures including consideration of the availability of suitable alternative routes, the difficulty of the proposed detour for heavy vehicles or agricultural equipment and impacts to residents and businesses in the immediate vicinity of the closure and detour. This TMP has included a review of several bridge locations.

Dedicated capital funding for upgrading of local roads is recommended. This may take the form of paving roads or widening and improving granular roads – specific projects are to be based on staff review and assessment with considerations of criteria as laid out above – specifically not restricted to traffic volumes but considering isolation of the road and use for agricultural goods.

9 Paving Rural Roads

The Municipality of Meaford’s State of the Infrastructure – Roads (2014) report provides guidance on determining whether a gravel road should be maintained, resurfaced or paved. Exhibit 9.1 illustrates a flow chart used to help determine if a gravel road should be paved.

Exhibit 9.1: Gravel Road Conversion Flowchart



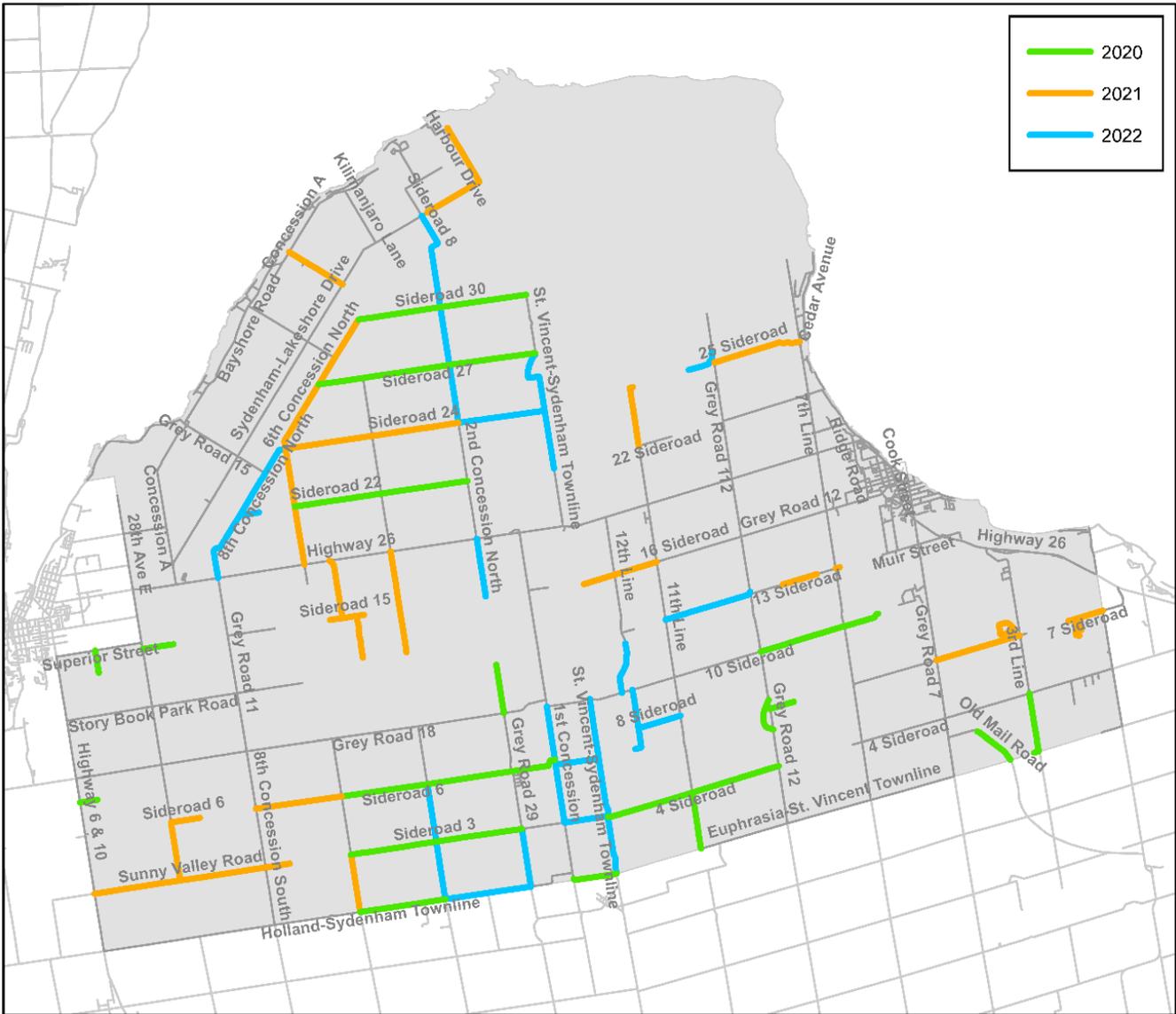
Source: Municipality of Meaford. Retrieved August 27, 2020 from <https://www.meaford.ca/en/business-development/resources/Documents/Road-State-of-the-Infrastructure-Report.pdf>

Meaford is continuing to maintain and improve the condition of rural roads. Exhibit 9.2 illustrates a map of gravel roads that are being resurfaced in Meaford

Municipality of Meaford – May 18, 2021

in 2020, 2021 and 2022. The municipality should continue its program of improving and maintaining its rural roads.

Exhibit 9.2: Meaford Gravel Resurfacing – 2020-2022



Source: Municipality of Meaford

Background Review

Some factors that should be considered when determining if a road should be paved include boulevard width, AADT, network connectivity, maintenance, and drainage. Generally:

- **Granular (gravel, stone, other loose aggregate):** Requires maintenance every 3 years or so and is the most expensive to

Municipality of Meaford – May 18, 2021

maintain but has the lowest up-front cost. Granular roads require a need for an increased stopping distance and have visibility issues associated with dust on newly resurfaced roads. Regular maintenance is required to mitigate issues such as rutting, loose gravel, and potholes. Granular roads are not ideal for segments with an AADT of more than 200 vehicles due to the increased maintenance costs related to road wear from higher vehicle volumes.

- **Surface Treated (Low Class Bituminous or LCB):** Best practices suggest resurfacing every 5 to 7 years when the PCI is favourable to extend the life of the surface, and is better suited for roads with an AADT of less than 400.
- **Paved (High Class Bituminous or HCB):** Best practices resurfacing every 19 years where the road is treated with hot mix asphalt and has the lowest maintenance cost. Generally, HCB is considered for roads with an AADT greater than 400.

Policy Recommendation

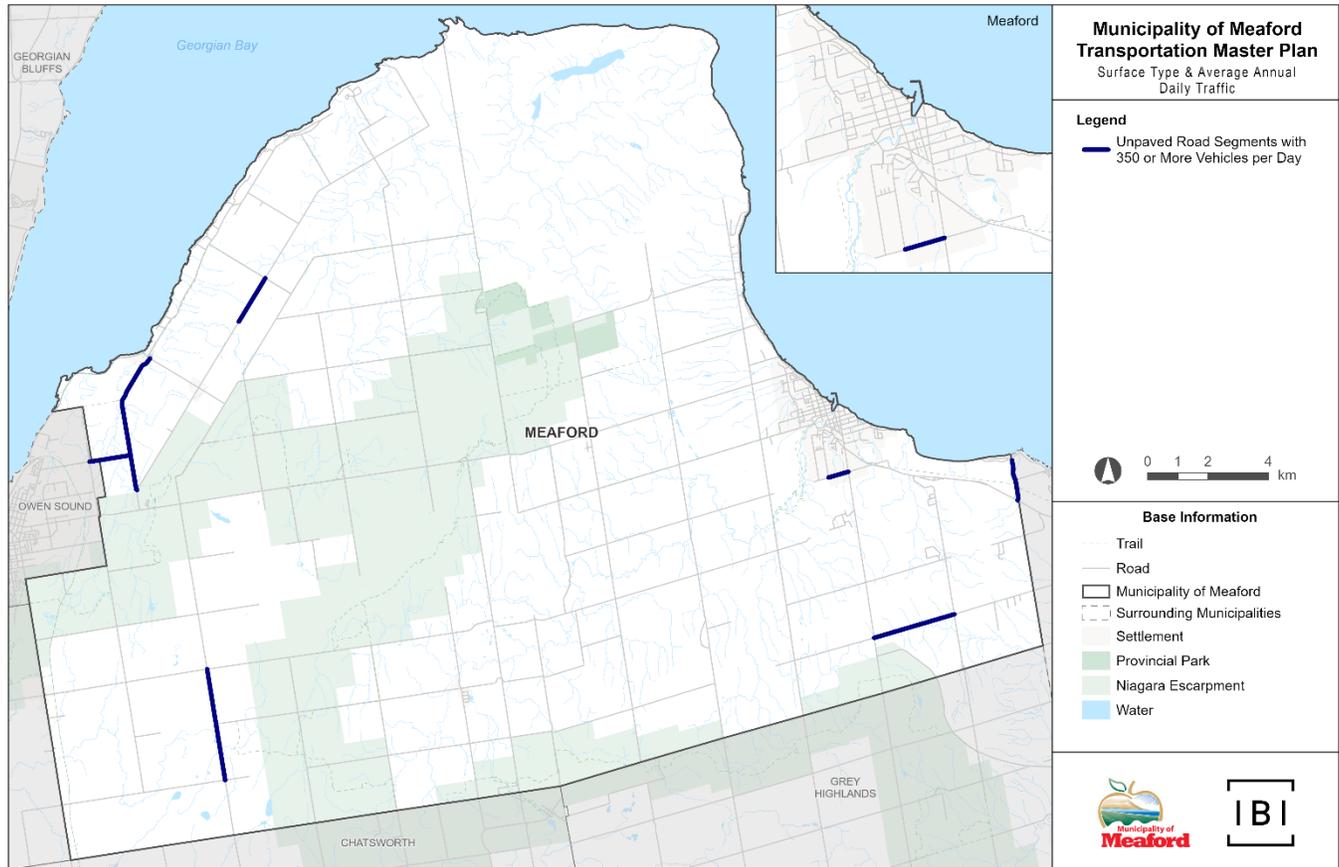
Meaford shall develop a Level of Service policy that utilizes industry best practices and utilize AADT data to determine the most appropriate surface treatment as follows:

- Fewer than 200 vehicles per day: Granular
- Between 200 and 400 vehicles per day: Surface treated (LCB)
- More than 400 vehicles per day: Paved (HCB)

Best practices can evolve over time as costs for surface types change and new technologies are developed. Meaford should periodically review thresholds and surface treatment types and engage with the industry and peer municipalities to explore and adapt municipal practices.

Where AADT data suggests a road's surface should be changed, further assessment is required on a case-by-case basis to assess the other factors that contribute to determining the appropriate surface type (e.g. boulevard width, network connectivity, maintenance and drainage). If an upgrade is recommended, the project should be scheduled and prioritized through capital budget planning. Exhibit 9.3 highlights existing unpaved roads where traffic volumes are approaching the threshold. These segments should be monitored to assess the potential need for upgrading the surface.

Exhibit 9.3: Unpaved Road Segments with 350 or More Vehicles per Day



10 Road Design and Planning

The following section outlines considerations for several road design and planning topics where guidance has been requested. These do not require policy language for the TMP, but instead guidance is provided on how to address these issues.

Advisory Speed Limits

The Municipality has roads where curves require reduced travel speeds to be safely navigated. Advisory speed limit signs are used to alert drivers of upcoming curves in the roadway that require drivers to slow down to safely navigate the hazard.

It is important to set an appropriate advisory speed – if the advisory speed is too high, drivers may not slow down enough to safely navigate the curve. If the advisory speeds are too low, it may result in low compliance as drivers learn they are able to travel through the curve at a higher speed and may also disregard the advised speed limits on other roadways throughout the area.

Municipality of Meaford – May 18, 2021

OTM Book 6 – Warning Signs outlines two methods to determine the advisory speed. One method is based on a formula, where the advisory speed is calculated using the curve radius, superelevation of the roadway, and a friction factor. The second method requires the use of a ball-bank indicator, which is equipment that is mounted on a vehicle for the purposes of assessing the curve.

Based on the difference between the posted speed limit entering the curve and the advisory speed limit (calculated or measured), OTM Book 6 provides guidance on the required sign types, signage, and placement ahead of the curve or hazard. The principle behind these requirements is that the larger the speed difference, the more prevalent the advanced warning needs to be for drivers to safely navigate the curve.

Where road geometries do not meet target design / operating speed, warning signage shall be provided pursuant to OTM Book 6. Locations should also be flagged and prioritized for individual assessment as part of the safety assessment program, detailed in the TMP.

Roadside Safety Devices

The Ministry of Transportation Ontario (MTO) Roadside Design Manual provides guidance on the design of the roadside environment. Common factors that should be considered in the design of the roadside environment includes road classification, design speed, operation speed, posted speed, traffic volumes and composition, drainage, pavement design, right-of-way constraints, access requirements, among other factors. Generally, the roadsides should be designed to provide a clear, recoverable, and forgivable clear zone where feasible. Where obstacles are identified, consideration should be given to remove, relocate, and/or redesign the obstacle to reduce the probability and severity of collisions with the obstruction. Where the roadsides cannot be designed free of obstacles, safety devices should be introduced to reduce risks. Roadside safety devices are part of the roadway infrastructure that functions to maintain a safe operating environment. Some common measures and potential roadside safety devices to mitigate the risk of run-off-the-road collisions that could be considered are:

- Provide roadside clear zone free of obstacles (e.g., trees, signage, poles, etc.)
- Install delineation warning devices, such as chevron alignment signs, raised pavement markers, wider pavement marker;
- Install rumble strips (shoulder or center line);
- Install guiderails; and
- Change curve alignment.

It is recommended that the Municipality of Meaford undertake a roadside safety device assessment and safety audit of roadways that have deficiencies related to roadway or shoulder widths. This review would compare the built roadway

Municipality of Meaford – May 18, 2021

environment to design guidelines in order to identify where the roadway design elements are substandard. Another method that could be used to identify locations that would benefit from a roadway redesign is to conduct a network screening for collision hotspots that could be attributed to narrow roadway, clear zone, or shoulder widths. Collision types such as run-off-the-road collisions, opposite direction sideswipes, and approaching (head-on) collisions can indicate safety issues due to the design of different aspects of the roadway (e.g., insufficient shoulder/clear zone width, or insufficient lane width). After the issues and deficiencies have been identified, Municipal can prioritize the different locations, and identify mitigation measures that could be implemented to improve roadway safety.

Municipal should refer to the MTO Roadside Design Manual when determining whether the roadside environment is appropriate for the road characteristics. The roadside design manual also identifies the design guidelines for the various mitigation measures.

Design Speed

Design speed is an important variable for designing roads as it affects grading, curvature, traffic protection, and other design features. The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (2017)⁸, commonly referred to as the TAC manual, provides guidance on selecting a design speed.

Design speed varies on the type of road and whether it is in a rural or urban environment. As a rule of thumb, the design speed should be 0-10 km/h greater than the posted speed limit for areas where the posted speed limit is less than 60 km/h. If the posted speed limit is 60 km/h or greater, the design speed should be 20 km/h greater than the posted speed limit. For example:

- Posted speed limit = 50 km/h; Design speed = 50-60 km/h (50 km/h + 0-10 km/h)
- Posted speed limit = 80 km/h; Design speed = 100 km/h (80 km/h + 20 km/h)

In urban areas, it is becoming increasingly common for roads to be designed to the speed that matches the desired posted and operating speeds. This helps to discourage unsafe speeds in areas where pedestrians and other vulnerable road users may be present. Designing new local roads to lower speeds mitigates the need for traffic calming in the future.

⁸ <https://www.tac-atc.ca/en/publications-and-resources/geometric-design-guide-canadian-roads>

Municipality of Meaford – May 18, 2021

Sight Distance

The three different sight distances commonly considered in road design are Stopping Sight Distance, Decision Sight Distance, and Intersection Sight Distance. Exhibit 10.1 provides a description of each sight distance, and examples of operating environments where they should be applied. It is also noted that it is important to provide more than minimum sight distance where possible.

Exhibit 10.1: Sight Distances

Category	Description	Environment
Stopping Sight Distance	The length of roadway that is required for a driver travelling at the design speed to recognize an upcoming hazard and come to a complete stop before reaching the object	Approaching an intersection or approaching a median or other stationary roadside object
Decision Sight Distance	The length of roadway required for drivers to recognize a potential hazard, select an appropriate speed and path, and initiate and safely complete the manoeuvre	Complex operating environments
Intersection Sight Distance	The sight distance available at the point where a driver stops before entering an intersection. This is based on the design speed of the cross street, and is dependent on the desired manoeuvre	Entering an intersection

The TAC Geometric Design Guide for Canadian Roads (2017) provides guidance for the sight distance requirements. The TAC manual also provides additional factors to consider such as vertical grade and intersection skew angles.

It is recommended that the Municipality of Meaford refer to the TAC manual when determining whether the provided sight distances are appropriate for the operating environment, specifically:

- Stopping Sight Distance: TAC manual, Table 2.5.2 and Table 2.5.3;
- Decision Sight Distance: TAC manual, Table 2.5.6; and

Intersection Sight Distance (left and right turn): TAC manual, Table 9.9.4 and Table 9.9.6.