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Item No. 15.1.8
Halifax Regional Council
November 22, 2022

TO: Mayor Savage and Members of Halifax Regional Council

Original Signed by 

SUBMITTED BY: Jacques Dubé, Chief Administrative Officer

DATE: November 17, 2022

SUBJECT: **Supplementary Information on the Municipal Design Guidelines**

SUPPLEMENTARY REPORT

ORIGIN

September 14, 2021, Halifax Regional Council, Item 14.1, Ratification from Committee of the Whole
September 14, 2021 - Proposed Administrative Order 2021-003-OP, Respecting Amendments to Municipal Design Guidelines - Municipal Design Guidelines (Red Book) Update

MOVED by Councillor Mason, seconded by Councillor Blackburn

THAT Halifax Regional Council:

1. *Give first reading and schedule a public hearing to consider the proposed amendments to the Regional Subdivision By-law as set out in Attachment B of the staff report dated June 16, 2021;*
2. *Request a supplementary report regarding the elimination of suburban road standards and the adoption of the regional centre standards for the entire urban service area;*
3. *Request a supplementary report on:*
 - a. *Basing design speeds on street typologies;*
 - b. *Reducing design speeds for minor and major collectors to 40-50 km/hr; and*
 - c. *Reducing design speeds for local streets 25-40 km/h*
4. *Request a supplementary report on reducing the minimum width of minor collector roadways to seven meters;*
5. *Request a supplementary report that considers the benefits either requiring two sidewalks on a street or a design as a Residential Shared Street as provided in the NACTO Design Guides for inclusion in the Municipal Design Guidelines;*
6. *Request a supplementary report looking at the benefits of adding raised intersections to the Municipal Design Guidelines; and*
7. *Request a supplementary report looking at the benefits of adding medians and islands to the Municipal Design Guidelines.*

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LEGISLATIVE AUTHORITY

- *Provincial Subdivision Regulations*, Part B “Public Streets”, subsection 13 (1), as follows:

13 (1) All proposed municipal public streets shall be approved by the engineer.

- *Halifax Regional Municipality Charter*, (HRM Charter), Part IX “Subdivision”, clauses 226(1)(a), and 281(3)(f), as follows:

226 (1) The Council may, by policy, adopt amendments to
(a) the engineering specifications in a subdivision by-law;

281 (3) A subdivision by-law may include
(f) requirements for the design and construction of streets, private roads, wastewater facilities, stormwater systems, water systems and other services;

- *Halifax Regional Municipality Charter*, (HRM Charter), Part XII “Streets and Highways”, clause 322(1), as follows:

Street related powers
322 (1) The Council may design, lay out, open, expand, construct, maintain, improve, alter, repair, light, water, clean, and clear streets in the Municipality.

- *Halifax Regional Municipality By-law Number S – 300, By-law Respecting Streets*, Part IV – Streets & Services Permit, clause 23, as follows:

23. (1) No person shall:
(a) make any excavation in a street;
(b) install or repair any facility on a street
(c) make use of the street, or any portion thereof, for any activity other than as a right of way or a use already regulated under this or any other by-law of the Halifax Regional Municipality, without first obtaining a Street and Services Permit from the Engineer.

RECOMMENDATION

It is recommended that Halifax Regional Council:

- 1) Direct the Chief Administrative Officer to continue to update the Municipal Design Guidelines to meet industry best practice, as described in the November 9, 2021 Council Report dated June 16, 2021; and,
- 2) Request the Mayor to write a letter to the Minister of Public Works requesting that the authority to set speed limits below 50 km/hr be delegated to the HRM Traffic Authority.

BACKGROUND

The Municipal Design Guidelines (The Guidelines) were developed to provide uniform standards for the construction of infrastructure within the Halifax Regional Municipality. The Guidelines are enabled by the Provincial Subdivision Regulations, the *HRM Charter*, the *Regional Subdivision By-law*, *By-law S-300 Respecting Streets*, and *Administrative Order 2021-003-OP Respecting Amendments to the Municipal Design Guidelines*.

The 2021 Municipal Design Guidelines were approved by Regional Council on November 9, 2021. At the time of first reading, Council requested supplementary information providing reasoning for key elements of the Guidelines, as well as consideration of alternatives, regarding the staff report dated June 16, 2021 "Municipal Design Guidelines (Red Book) Update".

This work was completed under the direction of a steering committee; a professional staff team responsible for reviewing existing guidelines and industry best practices (including National Association of City Transportation Officials (NACTO), the Transportation Association of Canada (TAC), Crime Prevention Through Environmental Design (CPTED), etc.). The committee made recommendations based on their shared expertise and in alignment with the most recently adopted versions of the Municipality's various documents such as the Regional Municipal Planning Strategy (Regional Plan), Integrated Mobility Plan (IMP), Active Transportation Priorities Plan, Moving Forward Together Plan, Urban Forestry Master Plan, Centre Plan, and HalifACT. While there were significant updates in the 2021 Guidelines, there is still work to do to bring the Guidelines up to the latest best management practices.

Most of HRM's existing roadway infrastructure has been designed and built according to standards that were developed during a very auto-centric period that prioritized motor vehicle speed and capacity over other modes. Updating existing streets to reflect new standards in retrofit situations is challenging and compromises are often required with limited space. However, in greenfield developments, where new roads are being established, there are fewer limitations to designs.

This report outlines the recommendations and supporting rationale in response to the six supplementary requests made by Council at first reading.

DISCUSSION

The 2021 Guidelines are separated into three parts:

- *Part A: Design Guidelines and Standards* contains the design philosophy, processes and standards for design of Municipal Infrastructure;
- *Part B: Standard Details* contains the standard engineering details to support the standards in Part A; and
- *Part C: Drawing Standards* contains the specific standards HRM requires for submission of paper and electronic files using computer-aided drafting (CAD).

Designers are required to become familiar with Part A and to make design decisions using engineering judgement before proceeding to Part B. The 2021 updates emphasize "context sensitive design", where designers must consider the surrounding factors in their design. This approach allows for the flexibility shown in the updated street cross sections in Part B.

In addition to this flexibility, staff are empowered to request changes if the proposed design is deemed to be inappropriate for the surrounding context.

There are nuances in detailed design of streets, and changes to one element often results in a chain reaction of required changes to other elements to enable good design. For example, a change in road width can impact turning radius at an intersection. Another example is a change to the design speed used, requires changes to multiple factors such as curve radius, lane width, etc. further on in the same "stretch" of road.

Good design requires a combination of experience and engineering judgement, supported by guidance from appropriate design resources. The update to the Guidelines was driven by industry best practices including the National Association of City Transportation Officials (NACTO), the Transportation Association of Canada (TAC), current best practices across Canada, and local expertise.

Supplementary Information Requests

As noted in the Origin section of this report, on September 14, 2021, Regional Council requested a supplementary report on the following matters:

- Eliminating suburban road standards and the adoption of the regional centre standards for the entire urban service area;
 - Basing design speeds on street typologies;
 - Reducing design speeds for minor and major collectors to 40-50 km/hr; and
 - Reducing design speeds for local streets 25-40 km/h
- Reducing the minimum width of minor collector roadways to seven meters;
- Benefits of either requiring two sidewalks on a street or a design as a Residential Shared Street as provided in the NACTO Design Guides for inclusion in the Municipal Design Guidelines;
- Benefits of adding raised intersections to the Municipal Design Guidelines; and
- Benefits of adding medians and islands to the Municipal Design Guidelines.

Discussion on each of these items is provided in the following sections.

Elimination of suburban road standards and the adoption of the regional centre standards for the entire urban service area

The 2021 Guidelines separate roads into subcategories of street typologies. These are illustrated in figure 1.

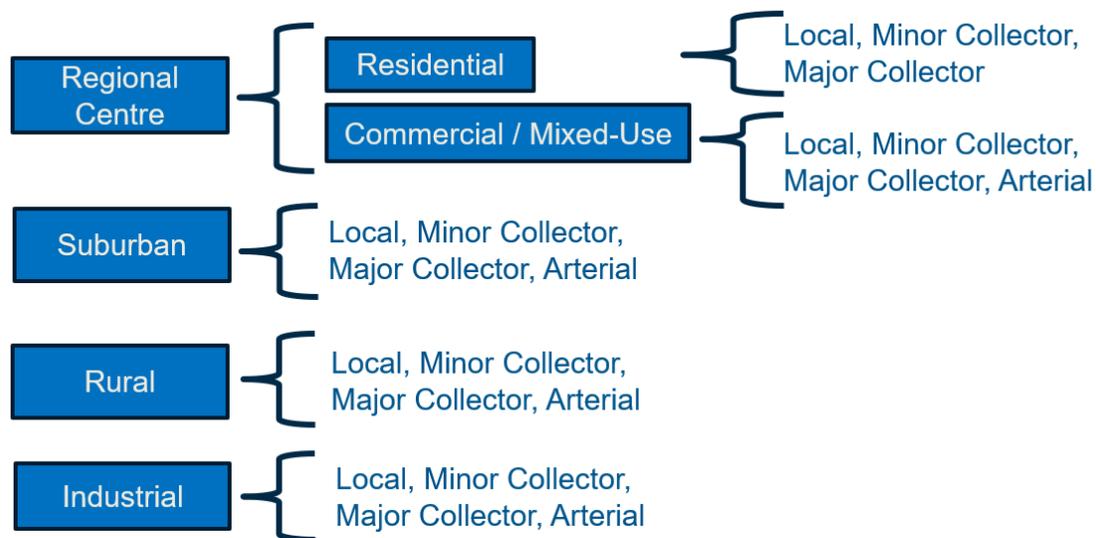


Figure 1 - Street Typologies from 2021 Municipal Design Guidelines

The differences between the Regional Centre and Suburban standards are minimal. Primarily, Regional Centre standards have larger maximums for sidewalks and frontage widths for areas designated as Commercial / Mixed-Use. This is to accommodate increased pedestrian activity and to allow for uses such as sidewalk cafes. However, minimum sidewalk widths remain the same.

Both Regional Centre and Suburban standards provide flexibility that allows for context sensitive design. Options and flexibility are addressed through ranges and notes in the Part B: Standard details, and in the supporting text in Part A. Staff are also empowered to request changes, if the proposed designs do not support the surrounding factors. For example, staff are currently working to incorporate standard bike lanes in certain cross sections. In this manner, the standard cross sections will evolve as the new standards are applied, and common features are encountered.

Staff Recommendation: Maintain the standards shown in the 2021 Guidelines, and revisit this item as part of future updates.

Basing design speeds on street typologies, reducing design speeds for minor and major collectors to 40-50 km/hr, and reducing design speeds for local streets 25-40 km/h.

Design speeds for minor and major collectors is 50-60 km/h in the 2021 Guidelines. In unsigned areas, the default speed limit is 50 km/h. Design speed is used in selecting the vertical and horizontal elements (curves, grades, etc.) for new roadways, while the posted speed is the legal allowable maximum speed by road users. Changes to design speed influences the geometric elements of a street. Lower design speeds impact factors like the allowable safe slope of a street, minimum curve radius, lane width, etc. For safety reasons, the posted speed limit cannot be higher than the speed at which a street can safely be driven. Conversely, drivers will typically travel near the speed a road is designed for based on the “feel”. For example, if a road is designed for 80 km/hr but posted at 40 km/hr, without any physical cues, most drivers will travel at speeds closer to 80 km/hr. To ensure a street is safe to be driven at the intended posted speed limit, streets are typically designed for slightly higher speeds than posted.

Design speeds for local roads is 30-50 km/h in the 2021 Guidelines. Staff have limited authority in what can be posted for speed limits below 50 km/h. This authority currently lies with the province, and the default speed in unsigned areas is 50 km/h. Staff continue to advocate to provincial staff for a default speed limit of 40 km/h on residential streets and/or the delegated authority to set speed limits below 50 km/h. It is important to ensure that a street can be safely used at the posted speed limit and that the design speed should not be less than the posted limit. Predictability is important for road safety. Posted speeds should change gradually between areas, and it is important to be consistent throughout a neighbourhood or along a corridor.

Travel speed can be influenced through other means of both passive and active traffic calming. Active traffic calming would include elements “added” to a road such as speed tables, speed humps, bump-outs, etc. Whereas passive traffic calming would include those elements “designed in” such as tighter curve radius, frequent curves, narrower lane width, visual interest / roadside features that slows down drivers, frequent intersections, etc. Well planned networks with frequent intersections and short stretches of straight, road means that vehicles typically cannot get up to speed before they have to slow or stop due to interruptions in traffic flow.

Table 2.3 in Part A of the Guidelines illustrates a range of design speeds. These are design speeds and not posted speeds. Because there is a range, staff do have ability to accept lower design speeds in some cases. It is important to ensure that a street can be safely used at the posted speed limit and that the design speed should not be less than the posted limit. Staff will continue to encourage speeds lower than they are now where there is authority to do so. Staff will also continue with traffic calming via the Road Safety Plan.

Staff Recommendation: No further changes at this time.

Reducing the minimum width of minor collector roadways to seven meters

The minimum width of a suburban minor collector in the 2021 Guidelines is 7.3 m, measured to gutters. This is the minimum width recommended by staff based on street usage of minor collectors including waste collection vehicles, emergency vehicles, and occasional snow storage. Additional width is allowed in areas needing curb side use such as parking. While the requested difference of 0.3 m may seem insignificant, it is necessary. Staff do not recommend decreasing the minimum lane width for this use. There may be individual streets where this is appropriate, but the considerations above need to be reviewed for the streets in question based on location and context. Staff would address this as part of the variance process.

Staff Recommendation: No further changes at this time.

Requiring two sidewalks on a street or a design as a Residential Shared Street as provided in the NACTO Design Guides

Currently, the only HRM street cross section that does not require a sidewalk on both sides is for the Regional Centre Residential / Suburban Residential Local (Standard Detail HRM 2). In this case, note 6 states "Sidewalks may be required on both sides based on destinations and pedestrian volumes". This note is intended to capture situations where there may be higher pedestrian volumes for nearby destinations such as schools, shopping, parks, bus stops, etc. There is also supporting text in Part A that empowers staff to require a sidewalk on both sides if the surrounding context supports this.

The cross section as presented now provides the option for some streets to only have a sidewalk on one side where appropriate. There are many existing streets in HRM that function well with sidewalks on one side only. These are low volume/speed local streets with no bus stops or destinations other than low density housing, such as parts of Woodlawn, Cole Harbour, and Fairview. There are also streets that have sidewalks on both sides, that only require a sidewalk on one side. In cases with destinations on either side, or where it would be challenging to cross the street due to sight lines or traffic speed or volume, sidewalks are considered on both sides.

Having additional sidewalks that are not fully utilized contributes to increased capital, operations and maintenance costs. The cost of 1 linear meter of sidewalk is \$1,000-\$4,000 to construct, \$8.20 for winter maintenance, and typically requires replacement every 40-50 years. Requiring sidewalks on both sides in all scenarios will result in additional capital and operations costs in the future. This also takes up right-of-way width that could provide other uses such as tree lawns.

Accessibility and pedestrian connectivity is a very high priority. There are cases where this priority can be met using just one sidewalk. These cases are not the majority, but it is useful to have the option when an appropriate case arises. Having sidewalks prioritized where they are most needed can allow the Municipality to address infrastructure gaps elsewhere.

Shared Streets are environments where pedestrians, cyclists, and cars use a common travelway. As opposed to a traditional street, where a pedestrian is entering the vehicle domain to cross the street, vehicles instead enter a pedestrian realm in order to transit along the street.

The presence of pedestrians and active transportation users, as well as the lack of any delineation between pedestrian and vehicle space, increase the passive traffic calming element of the street in addition to any active measures put in place such as planters or bollards. Often, existing low-volume streets will function as shared streets by default, particularly dead-ends and roads without sidewalks.

Shared streets can be a useful tool in retrofit situations where right-of-way space is very limited. Removing the need for sidewalks or dedicated bike lanes can provide otherwise cramped locations with the space to install street trees, furnishings such as bike racks, benches, and flowerpots, or patio permits for businesses. Within HRM this has recently been carried out on Argyle Street and Grafton Street in the downtown core.

Additionally, Shared Streets can be designed from the outset of a community. Potential benefits include lower cost of installation and maintenance of the infrastructure, reduced stormwater runoff, increased green space and tree canopy, reduced albedo and heat island effect, reduced travel time for pedestrians, stronger passive traffic calming, encouragement of modal shift towards active transportation, increased development density, and a stronger sense of community through increased interaction and awareness of all users.

Shared streets need to carefully consider the needs of all users, including those with visual impairments. Shared streets need to be designed with care to provide an accessible travel way for all.

Staff recommendation: Develop a Local Shared Street standard using guidance from NACTO and mature projects completed by other municipalities.

Adding raised intersections to the Municipal Design Guidelines

Raised intersections are at a similar grade with the sidewalk and require vehicles to drive up and over, similar to speed tables, which can help to reduce vehicle speed through intersections.

Staff have already been considering adding raised intersections to the Municipal Design Guidelines. Based on consultation with accessibility advocates, staff understand that these crossings can be difficult to navigate for people with impaired vision. Clear delineation and wayfinding are required for a person to know when someone is entering and exiting a safe space. On a typical intersection, the pedestrian ramp acts as this cue. Thus far, staff have developed standards for Tactile Warning Indicator Strips, but more work will be required to create indicators that can cue directions. Additional design considerations to raised intersections include geometry and drainage details.

The 2021 Guidelines do not contain guidance on, or requirements for raised intersections. However, raised crosswalks are currently being piloted by the Municipality. Raised intersections can be considered for use in HRM but no HRM specific standard detail has been developed. If a designer proposes a raised intersection, staff will consider it on a case-by-case, through the variance request process, where drainage and accessibility could be assessed.

Following installation and review of several pilot raised intersections and crosswalks a standard detail can be developed for the Guidelines.

Staff Recommendation: Incorporate raised intersections in the next update of Part A of the Guidelines to clarify allowance of raised intersections and crosswalks and develop a standard detail for additional clarity.

Adding medians and islands to the Municipal Design Guidelines

The 2021 Guidelines contain guidance on medians in Part A, Section 2.4.7 – Medians. There are also medians included in Part B – Standard Details. Further guidance on geometric design of medians can be found in the Transportation Association of Canada (TAC) Guidelines on Geometric Design Guide for Canadian Roads. The 2021 Guidelines do not duplicate information that is found in national standards when there are no recommended changes; instead, the Guidelines refer to these standards.

Staff Recommendation: Staff do not recommend further changes.

In summary, the Guidelines are not rigid standards that discourage innovation, and they can be expected to evolve over time as new conditions are encountered. Design solutions that are consistently applied in response to new standards or conditions, will be incorporated into the Guidelines where appropriate.

FINANCIAL IMPLICATIONS

Changes to infrastructure standards are placing greater pressure on infrastructure and capital budget costs. This report formalizes guidelines that HRM is using. While incremental costs or savings are already accounted for in current approved budgets, the staff recommendation does not create additional long-term pressure on the capital budget.

The HRM costs associated with the implementing the recommendation can be accommodated within the approved 2022/2023 operating budget and with existing resources.

RISK CONSIDERATION

There are no significant risks associated with the recommendations in this Report. The risks considered rate low.

COMMUNITY ENGAGEMENT

Community engagement associated with the original motion is described in the November 9, 2021 Council Report – Municipal Design Guidelines (Red Book) Update”¹.

A public hearing was held on November 9, 2021. Speakers at this hearing included representatives of Walk & Roll Halifax and the Urban Development Institute.

A representative from Walk & Roll Halifax requested that the next Municipal Design Guidelines (MDG) update includes a standard detail for locations of accessible pedestrian signals. Staff supports this and will work towards developing this standard detail.

The representative from Walk & Roll Halifax also requested that staff return to Council for review of complete streets projects at each stage of functional, preliminary, and detailed design to make further comments and suggestions. At present, staff typically make a recommendation to Council for complete streets projects following the functional design process, the stage at which the most fundamental trade-offs in design elements need to be considered. Following direction from Council on a preferred functional design configuration, staff continue to consult with various community stakeholders (including Walk & Roll) during the preliminary and detailed design process. The current process also allows for staff to return to Council for more challenging decisions, but this may not be appropriate for all projects. The current process provides multiple opportunities for public and stakeholder input and strikes an effective balance that allows for community input while maintaining progress on project implementation. The process is constantly being refined and is responsive to changes deemed necessary for improvement; however, major changes to the council reporting framework are not recommended at this time.

A representative from the Urban Development Institute (UDI) requested that tree planting in new major subdivisions be required at the occupancy stage, and not the primary services stage as currently required. The reasoning was to prevent new trees from being damaged during the construction of homes. This is not a regulation of the MDG but is instead a regulation of the Regional Subdivision By-law. Staff will review this matter further, but not associate with the MDG updates.

The representative from UDI also requested a process for fast-tracked subdivision approvals for applicants with a proven history of submitting complete and compliant applications. Planning and Development staff are open to this suggestion, and will continue to explore the matter further, within other policies.

ENVIRONMENTAL IMPLICATIONS

This report is a supplemental report. Environmental Implications associated with the 2021 Municipal Design Guidelines are discussed in the original report. There are no Environmental Implications associated with the recommendation of this report.

ALTERNATIVES

¹ [Proposed AO 2021-003-OP, Respecting Amendments to Municipal Design Guidelines - Municipal Design Guidelines \(Red Book\) Update - Nov 9/21 Regional Council | Halifax.ca](#)

Regional Council may choose to not adopt the recommendation described in this report. This is not recommended for the reasons described in this report.

ATTACHMENTS

None

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

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