Complete Streets & Traffic Calming Design Guidance Manual

Town of Scarborough, Maine

Adopted by Town Council on August 19, 2026

TOWN OF SCARBOROUGH, MAINE

GPCOG
GREATER PORTLAND COUNCIL OF GOVERNMENTS

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Ironclad Road in Scarborough is an example of a typical residential street in Scarborough. Most streets in Scarborough lack sidewalks.
Source: Nelson\Nygaard

INTRODUCTION

BACKGROUND

Complete streets aim to provide a safe and comfortable transportation system for people of all ages, whether they are walking, biking, rolling, riding transit, or driving. By prioritizing people and their safety, complete streets create a more accessible, comfortable, sustainable and vibrant environment. **The Town's Complete Streets policy calls for the development of a design guidance manual to realize the Town's vision for safer, more complete streets and commitment to Vision Zero.** The Town also has a Traffic Calming Policy that outlines a public request process and eligibility criteria, but it provides limited direction on what treatments to use and in what context. The Manual outlines new tools for traffic calming and complete streets with context-sensitive design considerations to support implementation.

This Manual includes the development of an interactive web map, with every street in Scarborough categorized into new context-based street types. The street types guide decision-making on traffic calming treatments and street/right-of-way (ROW) design. Each street type includes a description, example streets, roadway context, and design guidance. In addition, the Manual a traffic-calming toolkit that describes common tools, key design considerations, and where each tool is most appropriate. The Manual closes with recommendations for updating the Traffic Calming Policy.

The Town of Scarborough Completes Streets & Traffic Calming Design Guidance Manual builds on the strategies outlined in the Greater Portland Council of Governments (GPCOG) Regional Complete Streets Design Guidebook (RCSDG), which is a resource for planning and designing complete streets throughout the GPCOG region. The Manual is a clear and accessible document that can make the Town's vision for the future of its transportation infrastructure actionable, supporting the Town's goals of improving safety on its streets with a context-sensitive resource that can help select appropriate traffic-calming strategies.

GOALS OF THE MANUAL

The Town of Scarborough launched this effort for a Complete Streets and Traffic Calming Design Guidance Manual to ensure that traffic calming guidance and complete streets recommendations address the unique needs of Scarborough. This Manual establishes goals specific to Scarborough:

- **Develop design guidance that promotes safer, more complete streets and outlines the benefits and tradeoffs of traffic calming treatments**
- **Craft a framework for Town partners to support consistent complete streets implementation**
- **Balance modal priorities for ROW allocation**
- **Ensure safety remains the top priority for all modes of transportation**

The **PACTS Regional Complete Streets Policy goals** are also the foundation of this Manual. PACTS created the following goals for their Regional Complete Streets Policy:

- **Consider All Users:** Ensure the needs of diverse users are considered throughout the transportation network to yield the most equitable economic, health, safety, accessibility, resilience, and environmental sustainability benefits of complete streets.
- **Complete the Network:** Create a complete, balanced, integrated, and fully connected transportation network that will promote transportation diversity of various modes such as walking, biking, wheeling/rolling, driving, riding transit, using paratransit and more.

- **Promote Great Design:** Encourage and implement complete and green streets design standards, principles, policies, and guidelines that complement the social fabric of the region.
- **Apply to All Projects and Phases:** Plan, design, operate, and maintain a network of complete and green streets that apply complete streets and green infrastructure principles into all projects (new, retrofit/reconstruction, maintenance, ongoing) and all phases (concept development, design, engineering, construction, maintenance).

TOWN-WIDE TRANSPORTATION ASSESSMENT KEY PRINCIPLES

This Manual is also driven by principles outlined in the Town-Wide Transportation Assessment, which the Town of Scarborough developed in 2025. These standards provide the Town with the best solutions for improving transportation in Scarborough and creating a multimodal transportation network.

- **Implement Complete Streets:** Update and adopt transportation guidelines and complete streets policies that will enhance safety, mobility, and multimodal connectivity for the Town of Scarborough and revise Town ordinances to expand multimodal network connectivity using complete streets policies.
- **Provide Safety Measures:** Prioritize safety for the design and construction of transportation infrastructure for all modes.
- **Create Multi-Modal Network:** Grow and improve multimodal network connectivity and mobility to increase transportation options within the Town of Scarborough and improve transit access while establishing multimodal design requirements for different roadway types, including for bicycle and pedestrian infrastructure.
- **Meet Transportation Demands:** Increase the capacity of the transportation system within Scarborough and optimize transportation improvements for a balance between modes by considering the needs of all users, including pedestrians, bicyclists, drivers, and transit users.
- **Encourage Connectivity:** Expand roadway connectivity to reduce travel times, traffic congestion, and delays while providing a well-connected multimodal network with bike and pedestrian travel options.

Bike lanes and landscaping help calm traffic on Scarborough Downs Road. Source: Nelson\Nygaard

POLICY AND PLANNING CONTEXT

OVERVIEW

The Manual builds on existing plans and enacted policies of the Town of Scarborough and various regional, state, and federal agencies. Collectively, the plans and policies establish shared goals and provide the foundation for how transportation investments and decisions are made within the Town.

The planning and policy context is particularly important as Scarborough continues to grow and evolve. Growth in population, housing, and economic activity is increasing travel demand and changing how people move throughout the community. As traffic volumes and development increases, there is growing interest in traffic calming, safer walking, rolling, and biking conditions, and clearer guidance for balancing mobility across all modes. The Manual helps translate adopted policies and planning goals into implementable design guidance that can be applied consistently as the Town responds to these changing conditions.

Many of the Town's existing plans and policies express support for complete streets and traffic calming but do not provide detailed street-level design direction. The Manual offers context-sensitive design guidance that draws from best practices and aligns with regional and state standards while also responding to local priorities. The Manual ensures that future decisions support the Town's long-term transportation goals and reflect local values. Town staff, planners, and decision-makers can confidently use the Manual as part of project development, capital planning, and public requests for infrastructure and traffic calming.

Policy and Planning Context

Both regionally and locally, there is strong support for context-sensitive complete streets and multimodal street design that improves comfort and safety for all users. The Town of Scarborough's adopted policies and plans demonstrate clear commitments to improving safety, supporting multimodal travel, and applying context-sensitive design across the Town's roadway network. These policies work in concert to set expectations for how streets should function for all users, but they rely on additional guidance to translate those commitments into consistent, project-level design decisions.

Local Plans and Policies

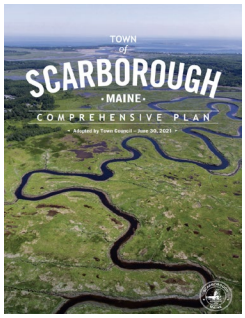
Vision Zero Council Resolution

The Town of Scarborough adopted a Vision Zero Council Resolution in May 2025. There have been two traffic deaths and 12 serious traffic-related injuries per year since 2020 in Scarborough. The resolution acknowledges that traffic deaths significantly impact the Town of Scarborough, while transportation infrastructure is serving an increasing number of vulnerable populations, including pedestrians, bicyclists, and populations disproportionately affected by traffic. The Town has adopted the regional Vision Zero Action Plan goal of eliminating traffic fatalities and serious injuries by 2045. The resolution dictates that future transportation infrastructure projects should prioritize safety on Town roadways, and acknowledges that this document will help the Town implement traffic calming tools to meet that goal.

Town of Scarborough Complete Streets Policy

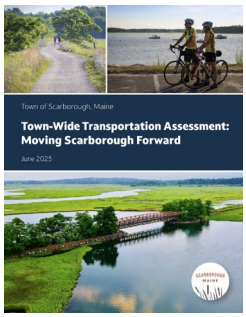
In January 2016, the Scarborough Town Council adopted a Complete Streets Policy, committing the town to considering all modes for all users in the planning and designing of public streets. This policy requires complete-streets principles to be included in all roadway projects, including new construction,

reconstruction, repaving, and retrofits. The policy lists potential street improvements and prioritization factors but does not provide design specifics, instead calling for the creation of this Guidance Manual.



Town of Scarborough Comprehensive Plan

In June 2021, the Scarborough Town Council adopted the Town of Scarborough Comprehensive Plan. This plan establishes complete streets as part of the Town's community vision and transportation network connectivity as a guiding principle in that vision. This document also summarizes the existing street design in the town, highlights mobility challenges, and sets goals of improving walkability and multi-modal access. The plan also calls for the creation of a guidance manual with design parameters based on street context.

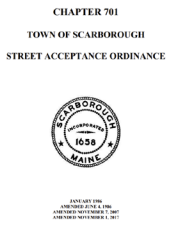


Town of Scarborough Town-Wide Transportation Assessment

In July 2025, the Scarborough Town Council adopted the Town-Wide Transportation Assessment, a document with an extensive existing-conditions report of the Town's roadways, and which highlights recommended projects resulting from both analysis of safety issues and public feedback. Although the document has some design guidance, it relies heavily on the NACTO Urban Bikeway Design Guide, which may not be appropriate for all street types.

Town of Scarborough Traffic-Calming Policy

In March 2024, the Scarborough Town Council adopted a Traffic Calming Policy that provides a process for members of the public to request traffic calming be implemented on a Town-maintained street. The policy sets volume- and speed-based criteria for when to implement traffic calming and provides a basic overview of potential traffic-calming interventions, including basic signage and striping, plantings, speed tables, and horizontal deflections. There is limited guidance on how to apply different interventions and no guidance on design requirements or considerations.


CHAPTER 701

TOWN OF SCARBOROUGH

STREET ACCEPTANCE ORDINANCE

Town of Scarborough Street Acceptance Ordinance

Last amended in November 2017, the Street Acceptance Ordinance outlines the conditions for accepting petitions and requests for public streets in the Town of Scarborough. This includes eight definitions of street types, and design and construction standards.

Key Projects

The Scarborough Downs Development has been ongoing since 2018 and is the largest single development project in Scarborough. One of the focus areas for the project includes the development of a downtown area on the property to serve the community, in addition to almost 2,000 units of housing, as well as mixed-use space and manufacturing space.

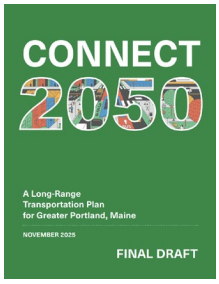
Reimagining Route 1 is a regional, in-depth assessment of the Route 1 corridor from Biddeford to Freeport that assessed, among other sections, the feasibility of complete streets treatments in different contexts and jurisdictions. Scarborough was one of several local partners involved, in addition to key stakeholders such as MaineDOT, who provided feedback on design concepts consistent with community needs and priorities. The project culminated in several concept designs and recommendations that municipalities may pursue. Roadway improvement projects to state roadways are generally funded through MaineDOT's Work Plan and the region's metropolitan planning

organization (MPO), Portland Area Comprehensive Transportation System (PACTS), which is housed in GPCOG.

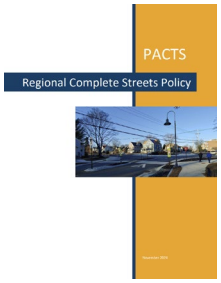
Regional, State, and Federal Plans and Policies

This Guidance Manual also complements regional, state, and federal plans and policies. The following documents were reviewed for consistency during the development of this manual. Designers should ensure proposed interventions meet all necessary state and federal design standards.

Regional Plans and Policies



PACTS Connect 2050**:** Greater Portland's federally mandated long-range transportation plan, which PACTS adopted in November 2025. This plan updates the previous long-range transportation plan, Connect 2045.



PACTS Regional Complete Streets Policy**:** The PACTS region's complete streets policy. This is the basis for PACTS' Regional Complete Streets Design Guidebook and Complete Streets Types.

PACTS Transit Tomorrow**:** Adopted in 2021, is the PACTS' 30-year strategic plan for improving public transportation and creating more transit-friendly communities.

GPCOG Vision Zero Greater Portland: Recommends strategies for achieving zero traffic deaths in Greater Portland, including proven safety countermeasures that are an important component to complete streets

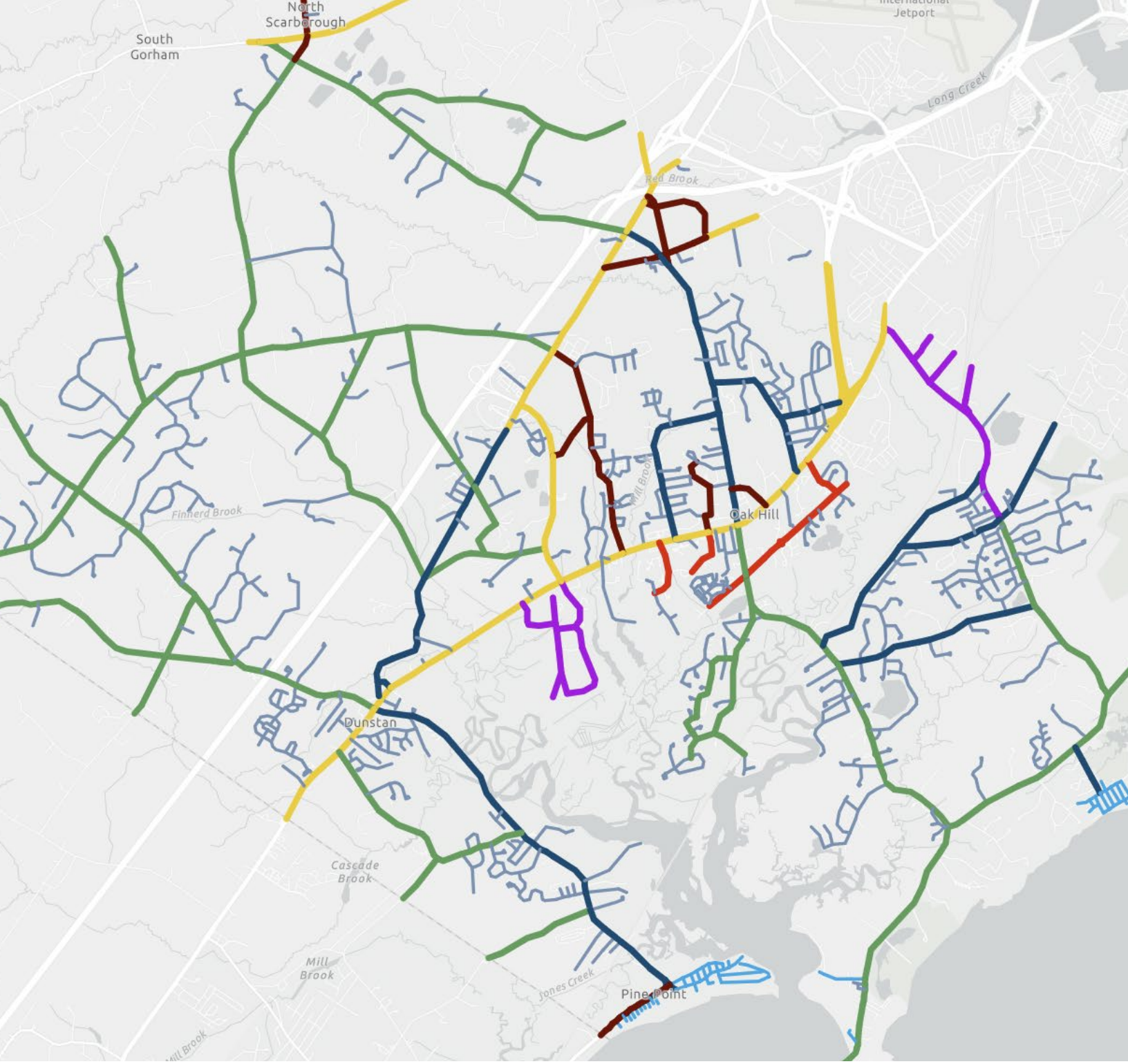
Statewide Plans and Policies

- MaineDOT Long-Range Transportation Plan**:** Lays out the 20-year plan for the state's transportation system, as well as implementation strategies.
- **MaineDOT Family of Plans**:
  - Maine State Transit Plan
  - Maine Integrated Freight Strategy
  - Maine State Rail Plan

    - Maine State Active Transportation Plan
- MaineDOT Complete Streets Policy**:** The State of Maine's guidelines for incorporating complete streets into transportation projects that receive MaineDOT funding. Encourages a context-specific approach.

Technical Guidance

- GPCOG Regional Complete Streets Guidebook**:** Guidance on how to improve walking, biking, and transit on six street types, Downtown, Village Center, Neighborhood Thruway, Major Corridor, Rural, and Industrial. Street type guidance includes recommended cross sections and complementary complete streets treatments. Scarborough Street Types will include similar guidance.
- Regional Bicycle and Pedestrian Facility Design Guidance for the PACTS Metropolitan Planning Area**:** Provides treatment selection and design guidance on walking and biking infrastructure for cities and towns in the region. This was integrated into the Regional Complete Streets Design Guidebook cross-section guidance.
- MaineDOT Context Classification: MaineDOT created an updated context classification system to determine speed limits and potential safety improvements that applies to all roads in the state.
- **Other MaineDOT Guidance**
    - Guidelines on Crosswalks
    - Lighting Guidelines for Pedestrian Crosswalks
    - Design Standards: These design standards are integrated into cross-section guidance where relevant in the Regional Complete Streets Design Guidebook.
- Public Right-of-Way Accessibility Guidelines (PROWAG)**:** The Access Board published new guidelines in 2024 under the Americans with Disabilities Act (ADA) that address access to sidewalks and streets, crosswalks, curb ramps, pedestrian signals, on-street parking, and other components of public ROW.
- Federal Highway Administration (FHWA) Manual on Uniform Traffic Devices**:** A comprehensive set of standards to regulate the design, installation, and use of traffic-control devices.
- **National Association of City Transportation Officials (NACTO) Guides**: The NACTO Urban Street Design Guide was one of the first resources to introduce context-sensitive approaches to city environments.
    - Urban Street Design Guide
    - Urban Bikeway Design Guide
    - Transit Street Design Guide
- **American Association of State Highway and Transportation Officials (AASHTO) Guides:**
    - Policy on Geometric Design of Highways and Streets
    - Guide for the Development of Bicycle Facilities



The Scarborough Street Type map shows the categorization of each street in Scarborough.

COMPLETE STREETS MAP

OVERVIEW

The map on the next page and the interactive webmap show the categorization of each street in the Town of Scarborough. Town staff can use these categories to determine guidance and traffic calming tools that are best suited for the street based on the specific neighborhood context.

The Town of Scarborough has a diverse mix of neighborhoods and businesses, from beachside communities to mixed-use neighborhoods. This chapter explains the process for defining the distinct street types for Scarborough, outlining the similarities with the GPCOG Regional Complete Streets Design Guidebook (RCSDG) and shares a link to the interactive map of Scarborough streets by type.

STREET TYPE DEFINITIONS AND SELECTION PROCESS

The Scarborough street types are modeled on the six street types established in the RCSDG, which were developed in alignment with the PACTS Regional Complete Streets Policy to help ensure that design guidance realizes the PACTS Complete Streets Principles consistently across the region. PACTS municipalities are encouraged to adapt the regional street type design framework to local conditions, including adapting or creating new street types that better reflect the local transportation network, land use, growth patterns, and roadway conditions.

Scarborough's street types are consistent with the RCSDG street types for Major Corridors, Rural Connectors, and Industrial/Business Access Streets, while introducing adaptions for Neighborhood and Village Streets to better reflect the Town's rural, agricultural, coastal, and suburban contexts. There are no Downtown Streets in the Town of Scarborough, so that street type was not included in the framework.

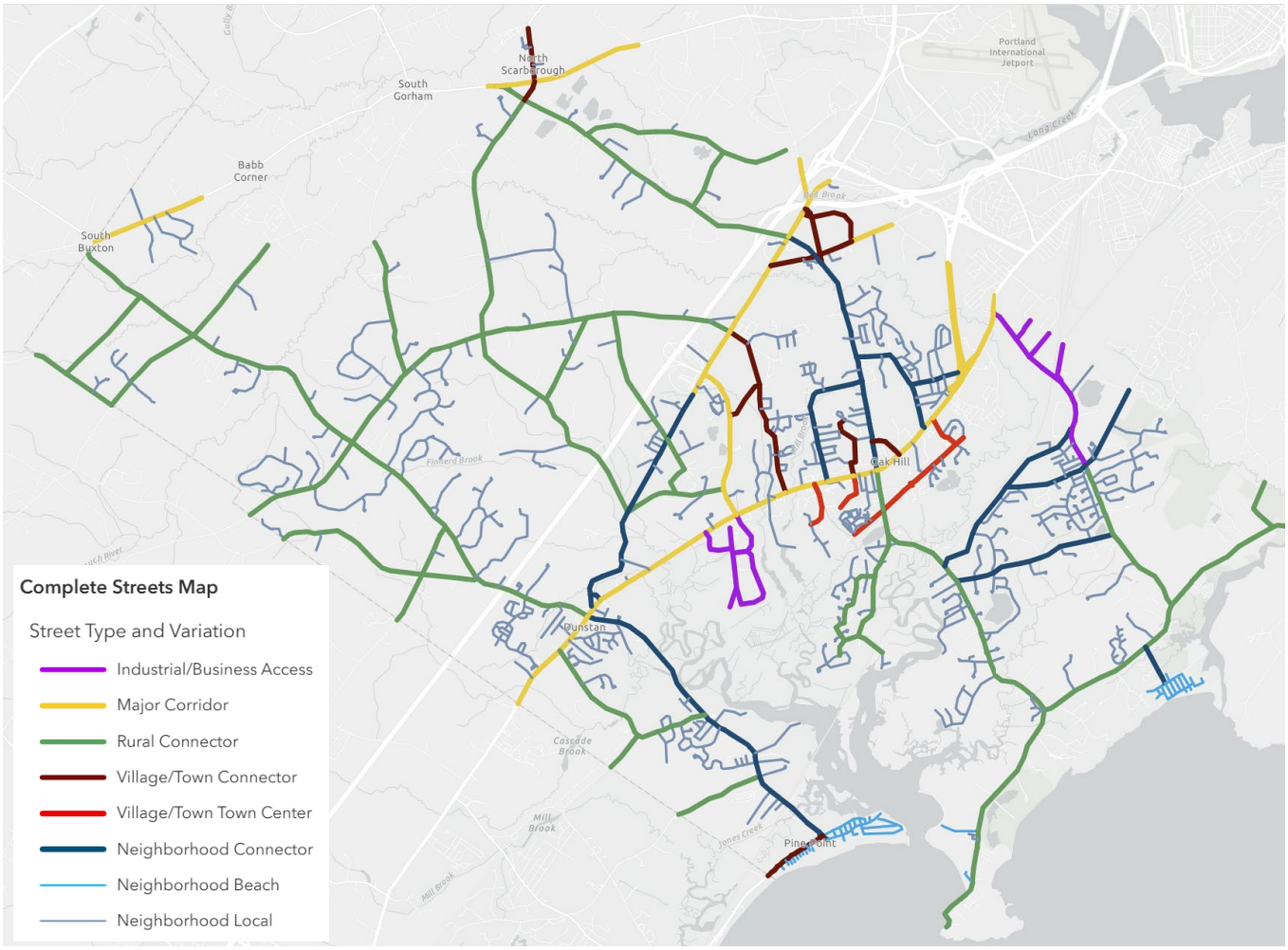
Village/Town Connector and Town Center Streets differentiate key activity centers from adjacent multimodal streets that connect to the broader transportation network. The three Neighborhood street types are similarly based on each street's role in the transportation network, as well as its proximity to the beach, which serves as a community hub for people walking, biking, driving, and accessing recreation. A summary of the final street type definitions is provided below.

- **Major Corridors** are high-volume regional roadways, that typically pass through commercial centers, with wider cross-sections and typically higher vehicle speeds, such as Route 1 and Cummings Road.
- **Rural Connectors** are rural roadways that link neighborhoods, local destinations, and other parts of the street network, such as Broadturn Road and Black Point Road.
- **Industrial/Business Access Streets** serve industrial, commercial, and employment areas and often accommodate a mix of passenger vehicles, trucks, and business access needs, such as Southgate Road, Washington Avenue, and Campus Drive.
- **Village/Town Connectors** connect residential areas to commercial, civic, and community destinations, such as Gallery Boulevard and Scarborough Downs Road.
- **Town Center Streets** are lower-volume streets that span a mix of land uses and support higher levels of walking, biking, and other multimodal activity, such as Portland Farms Road and Eastern Road.
- **Neighborhood Connectors** are residential streets that link neighborhoods to the broader street network and may carry more through traffic than local streets, such as Fogg Road and Chamberlain Road.

- **Local Streets** are low-volume residential streets that primarily provide access to homes and local destinations, such as Powderhorn Drive and Berry Road.
- **Beach Streets** are narrow streets in beach-area contexts that experience high seasonal walking and biking activity, such as Pearl Street and Ferry Road.

Town staff directly informed these definitions, which were developed collaboratively with GPCOG and informed by the Town's Street Acceptance Ordinance. Staff also advised on how the definitions should be applied, providing recommendations to the consultant team through an iterative process to develop the Complete Streets Map. The project team also received public feedback recommending changes to certain street type designations. Where those recommendations aligned with the street type definitions, the map was updated accordingly. For Ocean Avenue, the consultant team developed a formal response to feedback received from Higgins Beach residents.

COMPLETE STREETS MAP



Marked crosswalks on Bayview Avenue and Pearl Street. Marked crossings enhance visibility for pedestrians in residential areas like the Higgins Beach neighborhood pictured here. Source: Nelson\Nygaard

STREET TYPES

OVERVIEW

This section provides recommended treatments and street design guidance by street type. The street types are based on functional classification, land use, roadway context, and the role each street plays in Scarborough's transportation network. Because Scarborough's streets serve different roles, from neighborhood access to regional travel, the design guidance should respond to the character, function, and needs of each street. The street types in this manual provide a context-sensitive planning and design framework that helps the Town apply complete streets and traffic calming principles in a way that is consistent, transparent, and tailored to surrounding land use, roadway function, and community needs.

Street types are widely used by cities, towns, and villages of all sizes to streamline how local priorities and national best practices are applied to right-of-way decisions. Popularized through resources such as the NACTO Urban Street Design Guide, this approach connects roadway design decisions, including cross-section layout, modal priorities, and traffic calming treatments, to the land use and roadway context of each street. Organizing guidance by street type allows the Town to tailor design decisions to the function of each roadway while clarifying where to prioritize safety, access, and comfort for people walking, rolling, biking, and using transit, and where to balance those needs with vehicle access and connectivity.

For each street type, this manual provides high-level design guidance, cross-section graphics illustrating recommended treatments, and a photograph of an existing Scarborough streetscape. These elements are intended to support consistent decision-making among Town staff, designers, and other stakeholders when selecting appropriate treatments and evaluating tradeoffs. The design guidance does not represent requirements or mandates, nor does it prohibit treatments that are not specifically recommended. For each project, the Town will collect data on land use and roadway conditions and engage the public to understand mobility needs for all users. Together, existing conditions data, the street type design framework, and traffic calming treatments create the basis for design for individual roadway projects.

The street types are also intended to help align transportation decisions with Scarborough's broader planning efforts, including the 2021 Comprehensive Plan, the Townwide Transportation Assessment, the future Trails and Sidewalk Master Plan, and ongoing corridor and resiliency projects. Major Corridors and Town Center Streets generally correspond with areas where the Town is focusing growth, activity, and infrastructure investment, and where wider rights-of-way or higher-capacity roadways may create opportunities to add safety, access, and multimodal improvements. Connector streets also play an important role in supporting future growth because they carry higher multimodal volumes and link neighborhoods, activity centers, schools, open spaces, and regional routes. By tying street design guidance to these broader land use and investment priorities, the street types help the Town advance complete streets improvements in the places where they can best support safety, connectivity, resiliency, and sustainable growth.

Roadway Context

The Roadway Context section of each street type table summarizes key elements of the land use and transportation context that influence ROW decisions, including:

- **Functional Classification:** The grouping of public streets and highways based on their role in the broader transportation network and common Federal Highway Administration (FHWA) definitions (*Source: MaineDOT*).

- **Zoning:** The typical land use designation of parcels along that street type.
- **Setbacks:** The typical distance between the structure and the property line.
- **ROW Width:** Measurement of the available street space for walking, rolling, biking and traffic operations (*Source: Town of Scarborough)*.
- **Traffic Operations:** Average daily traffic volumes and number of lanes in each direction (*Source: MaineDOT*).
- **Functional Classification:** The grouping of public streets and highways based on their role in the broader transportation network and common Federal Highway Administration (FHWA) definitions (*Source: MaineDOT*).

Roadway Design Guidance

The Design Guidance section of each table summarizes the technical guidance recommendations for each street type.

- **Typical Posted Speed Limit:** The legally enforceable maximum speed drivers can go, indicated by signs on the roadway (*Source: MaineDOT*).
- **Target Speed:** The speed that planners and designers want motorists to travel for safe and more predictable traffic flow.
- **Design Vehicle:** The design vehicle is the primary vehicle that determines the design of elements such as turning radius and lane width. Footnotes describe the vehicle type for design/control vehicles (*Source: NACTO*).
- **Control Vehicle:** The control vehicle is a larger vehicle by comparison that should be accommodated in the overall design to ensure safe operations but may not require a change in design elements such as turning radii (*Source: NACTO*).
- **Intersection Curb Radius:** Typical preferred curb radii range along the given street type.
- **Lane Width:** Range for lane width to provide enough space for vehicle travel but be narrow enough to encourage lower speeds.
- **Paved Shoulder Width:** The typical preferred shoulder width along that street type (*Source: MaineDOT*).

Treatment Guidance

The treatment guidance section of each street type table summarizes the types of treatments that are generally appropriate for that street context.

- **Traffic Calming:** Outlines which tools and treatments are a priority, detailed treatment guidance is in the Traffic Calming Toolkit Chapter.
- **Transit:** Transit-supportive features intended to provide comfort and access that may be appropriate when transit service is present.
- **Curbside Uses:** General guidance on how the curb is intended to function for each street type, such as whether on-street parking, loading, or other curbside uses are appropriate.

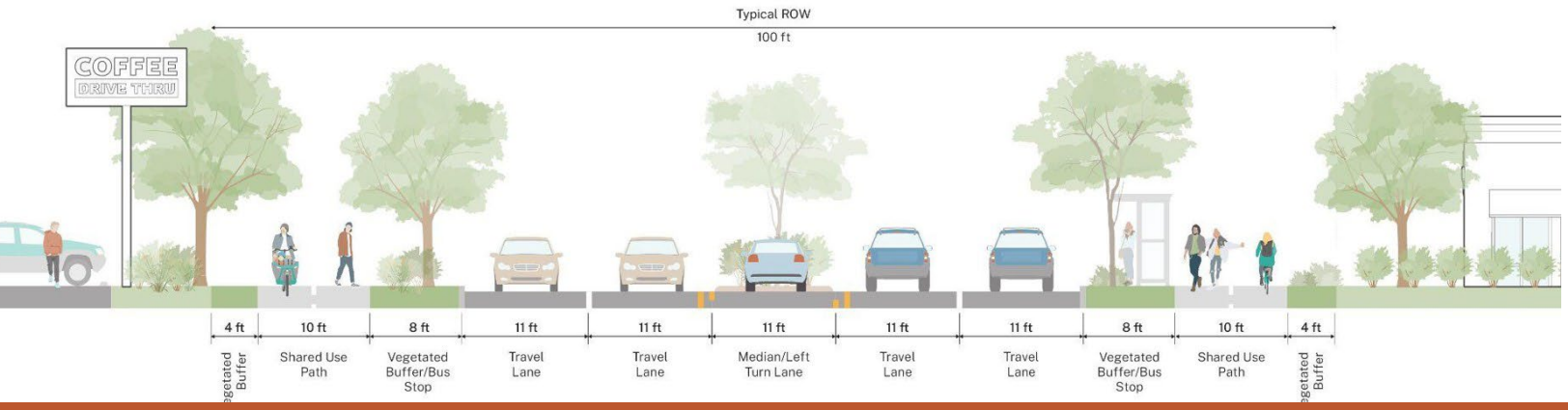
Route 1 in Scarborough is an example of a Major Corridor. Although this street type has high traffic volumes and speeds, tools like the medians shown here can help calm traffic. Source: Nelson\Nygaard

MAJOR CORRIDOR

Major Corridors in Scarborough, such as US Route 1 and Haigis Parkway, provide access to neighborhoods and commercial centers via Rural Connectors and Neighborhood Streets, as well as access to commercial areas via Industrial/Business Access roads. Major Corridors are typically arterials that serve as the spine of the transportation network, connecting Scarborough neighborhoods to key regional and local activity centers. They have high volume traffic and wide ROWs, which provide opportunities for high-quality transit infrastructure, including bus lanes where routes exist and stops equipped with shelters and benches where the ROW allows. Major Corridors should have sidewalks, and any bike facilities on this street type should only include protected bike lanes or shared-use paths with wide physical separation. This is because higher traffic volumes and speeds, as well as frequent driveway and intersection conflicts on major corridors create conditions where unprotected bike facilities do not provide adequate comfort or safety for most users. On-street parking is often prohibited or underutilized on Major Corridors because off-street parking is usually widely available. Access management strategies like consolidating driveways help to reduce conflicts and improve safety. Redesigns of Major Corridors, especially those that connect with Neighborhood and Village/Town Connectors, should collaborate with future land use changes that support multimodal trips.

Major Corridor Elements	
Roadway Context	
Example Streets	Route 1, Cummings Road, Haigis Parkway
Functional Classification	Principal/Minor Arterials
Zoning	Commercial, mix of uses
Setbacks	Moderate
ROW Width	60’ – 100’
Traffic Operations	10,000+ AADT
	1-2 lanes per direction, may have center turn lane
Roadway Design Guidance	
Typical Posted Speed Limit	35 – 45 mph
Target Speed (preferred operating speed)	35-45 mph
Design Vehicle	SU-30 (single-unit truck)
Control Vehicle	WB-67 (interstate semi-trailer)
Intersection Curb Radius (min.-max.)	25’ – 35’
Lane Width	10’ – 12’
Paved Shoulder Width	N/A
Treatment Guidance	
Traffic Calming	Horizontal Tools: are preferred to narrow multi-lane roadways and improve safety. Typical treatments include curb extensions and crossing islands. Vertical Tools: are less applicable because of large vehicle activity, speed cushions may be appropriate. Traffic Control Tools: are a priority at unsignalized intersections to improve the crossing environment. Landscaping and Placemaking Tools: are preferred where feasible to narrow the roadway and improve stormwater management.
Transit	Where present, benches and shelters recommended. Transit priority treatments may be warranted where there is frequent transit service.
Curbside Uses	Off-street parking with some exceptions

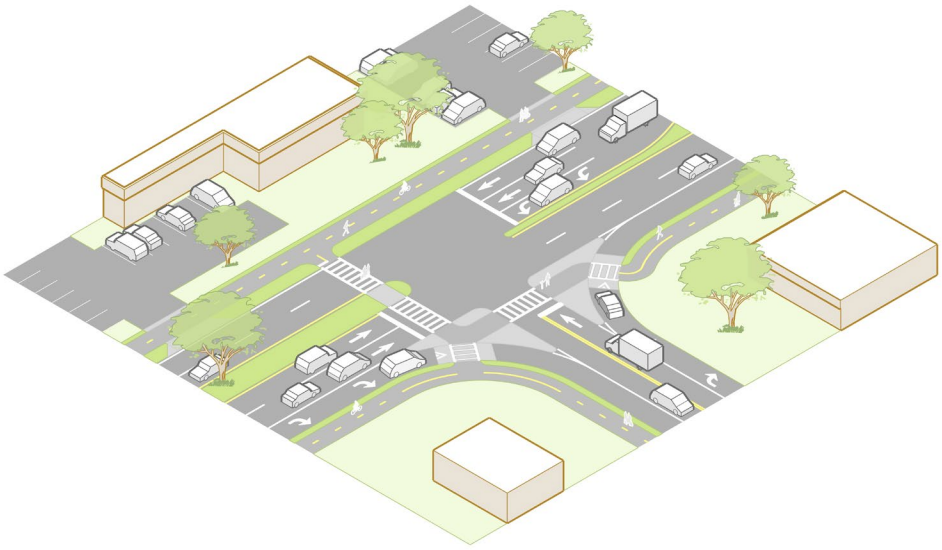
Major Corridor



DESIGN TRADEOFFS

Major Corridors are key regional connectors across all modes. On high-need segments for walking, biking, and transit, there should be dedicated space to improve safety and comfort. At intersections, traffic calming tools are critical to reduce conflicts and provide high-quality, safe crossing infrastructure. Traffic calming makes non-driving options like walking and biking safer and more attractive, encouraging mode shift over time.

On Major Corridors that connect to the larger highway system, such as some principal arterials, safe traffic flow may be a higher priority compared to other modes where activity may be limited.



Conceptual Traffic Calming at the Intersection of a Major Corridor and Neighborhood Connector

Marked crosswalk with tactile landing pad and rectangular rapid flashing beacon on Spurwink Road in Scarborough. These traffic-calming tools help improve visibility for pedestrians on rural roads where traffic volumes are higher. Source: Nelson\Nygaard

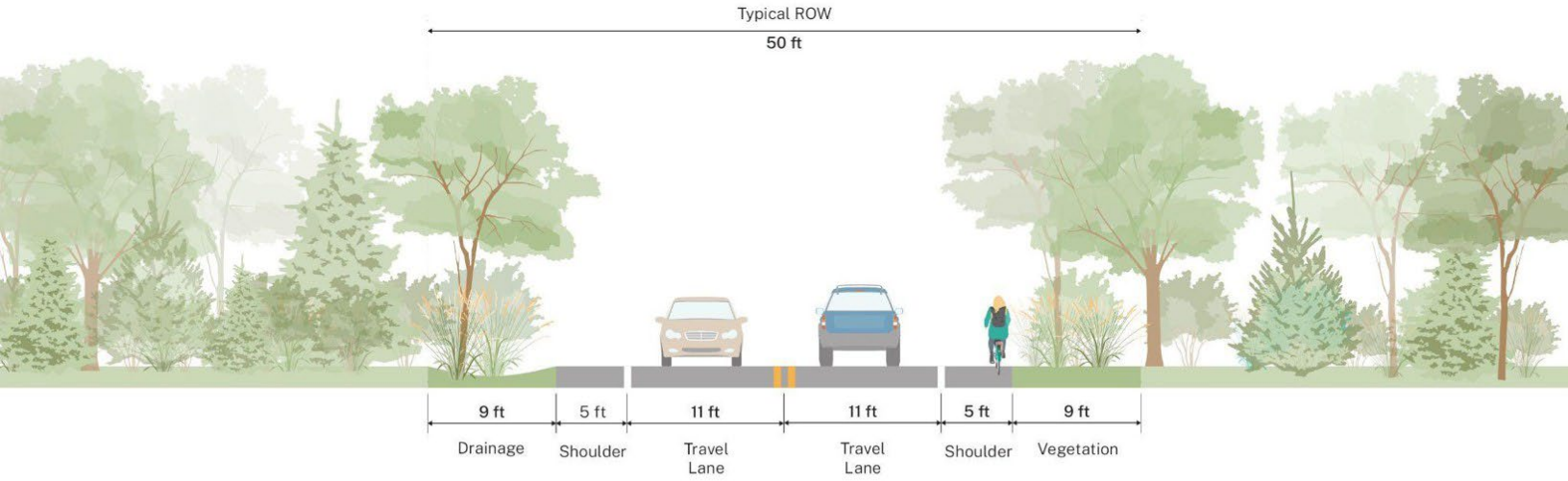
RURAL CONNECTOR

Rural Connectors typically travel through agricultural, conservation, and open space areas with dispersed residential uses. Traffic volumes are higher than some regional rural streets because rural streets in Scarborough often connect different neighborhoods and open space uses.

Residential and agricultural uses often have very large setbacks. Since Rural Connectors are often through low-density areas, pedestrian and bicycle activity is often low, but shoulders can accommodate travel by foot or bike and shared-use paths can serve areas with higher volumes of people walking and biking. Where Rural Connectors are near or part of the trail network, streets should provide shared-use paths. Rural Connectors that link to beach areas should include safety elements for active transportation such as marked crosswalks, flashing pedestrian beacons, sidewalks, and bike lanes.

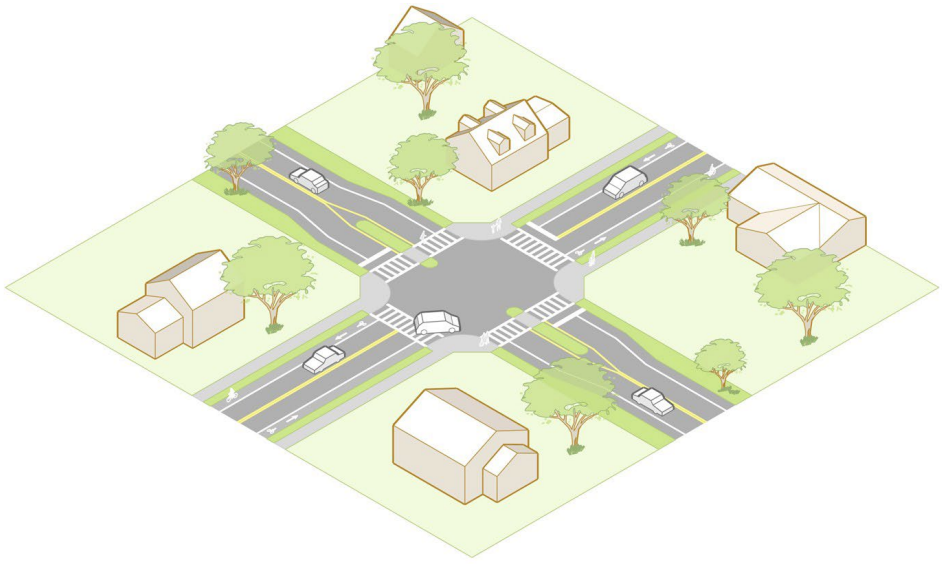
Rural Connector Elements	
Roadway Context	
Example Street	Broadturn Road
Functional Classification	Rural arterials, collectors, and roads
Zoning	Agriculture, open space, residential
Setbacks	High
ROW	50’
Traffic Operations	1,000 - 10,000 AADT
	1 lane per direction
Roadway Design Guidance	
Typical Posted Speed Limit	35 – 45 mph
Target Speed (preferred operating speed)	30 – 45 mph
Design Vehicle	SU-30 (Single-unit truck)
Control Vehicle	WB-67 (Interstate semi-trailer)
Intersection Curb Radius (min.-max.)	20’ – 30’
Lane Width	11’
Paved Shoulder Width	≥4’ if no sidewalk or bike facility present
Treatment Guidance	
Traffic Calming	Horizontal Tools: limited applications depending on shoulder and lane width. Consider narrowing to 11’ lanes to expand the shoulder or provide additional separation. Vertical Tools: speed cushions may be appropriate depending on speeds and large vehicle activity. Traffic Control Tools: are a priority at intersections where there is multimodal activity. Treatment suitability varies depending on available ROW. Landscaping and Placemaking Tools: where feasible can support stormwater management.
Transit	Where present, benches and shelters encouraged
Curbside Uses	Little to no street parking

Rural Connector



DESIGN TRADEOFFS

Rural Connectors often have limited paved ROW and no curbing. To accommodate other modes, like walking and biking, evaluate the role the Rural Connector plays in the active transportation and trails network, and consider repurposing available vegetated space for a shared-use path or wider shoulder that is more comfortable for walking, rolling, and biking. To improve safety and calm traffic, consider other measures like enhanced markings and signage, rumble strips, lane narrowing, and traffic control tools like mini or full-sized roundabouts.



Conceptual Traffic Calming at the Intersection of a Rural Connector and Neighborhood Connector

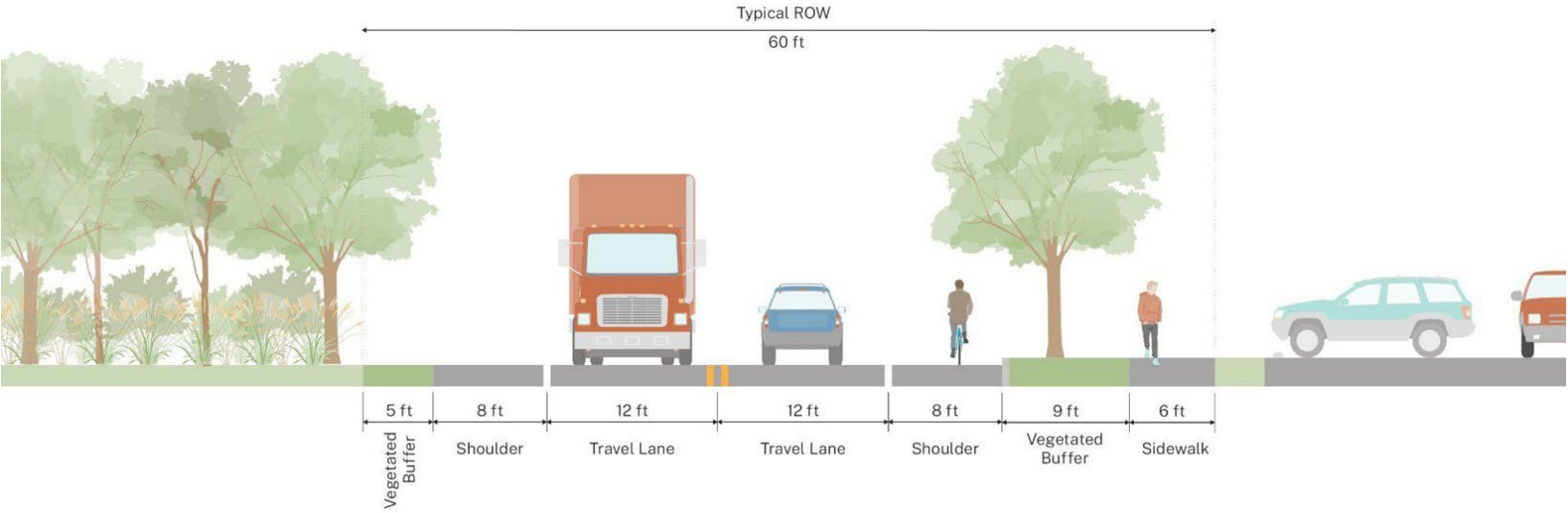
Pleasant Hill Road in Scarborough is an example of an industrial/business access street due to its traffic volume and ROW.
Source: Town of Scarborough

INDUSTRIAL/BUSINESS ACCESS STREET

Industrial/Business Access Streets are branches of Major Corridors or Village Connectors that are primarily for commercial and freight uses with low traffic volumes and low speeds, with limited multimodal activity, if any. This street type can connect with Major Corridors and higher-capacity spines of the transportation network, often with intersection treatments such as landscaped medians, but generally have infrequent sidewalks and crosswalks. Industrial/Business Access Streets can provide connections within commercial developments like medical facilities campuses, such as MaineHealth on Campus Drive, and in these cases may include traffic calming tools to support more multimodal activity that improve comfort and safety.

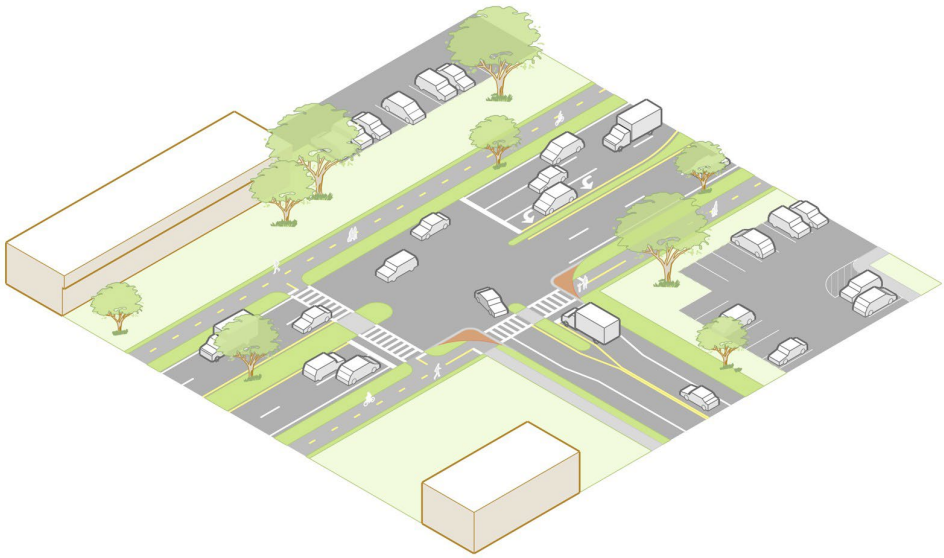
Industrial/Business Access Street Elements	
Roadway Context	
Example Streets	Southgate Road, Washington Avenue
Functional Classification	Minor Collectors or Local roads
Zoning	Industrial, Commercial
Setbacks	Moderate
ROW	50’ – 60’
Traffic Operations	Typically <1,500 AADT
	1 lane per direction
Roadway Design Guidance	
Typical Posted Speed Limit	20 – 35 mph
Target Speed (preferred operating speed)	≥25 mph
Design Vehicle	SU-30 (Single-unit truck)
Control Vehicle	WB-67 (Interstate semi-trailer)
Intersection Curb Radius (min.-max.)	25’ – 35’
Lane Width	11’ – 12’
Paved Shoulder Width	>4’ if no sidewalk or bike facility present
Treatment Guidance	
Traffic Calming	Horizontal Tools: recommended at intersections with more multimodal street types, priority is improving visibility and yield rates. Vertical Tools: typically not recommended; speed cushions may be appropriate depending on speeds and large vehicle activity. Traffic Control Tools: avoid traffic circles; crossing improvements like a pedestrian hybrid beacon are recommended at intersections with more multimodal street types. Landscaping and Placemaking Tools: typically limited to vegetated buffers where ROW is available.
Transit	Where present, benches and shelters encouraged
Curbside Uses	Little to no street parking with infrequent turnover; truck staging

Industrial/Business Access



DESIGN TRADEOFFS

Multimodal mobility is typically a lower priority on Industrial/Business Access Streets. However, corridor design should prioritize the access needs of employees who work along the corridor and consider intersecting street types. To provide a safe walking environment, repurpose on-street truck staging to add space for pedestrian treatments and add sidewalks where they do not exist. Where pedestrian volumes are higher and bikers are present, construct a shared-use path to provide a safe space for walking, rolling, and biking.



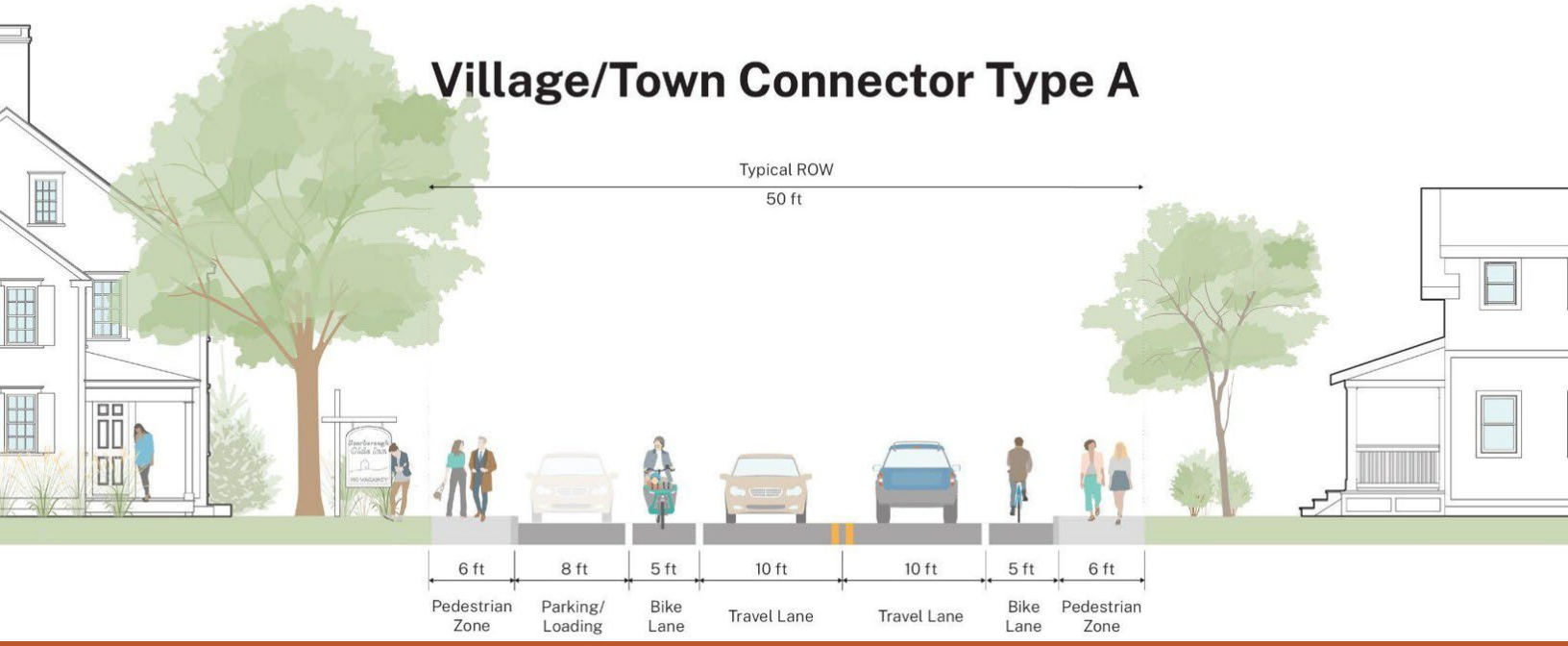
Conceptual Traffic Calming at the Intersection of a Major Corridor and Industrial/Business Access Street

Gallery Boulevard in Scarborough is an example of a Village/Town Connector due to the inclusion of limited pedestrian infrastructure and landscaping. Source: Town of Scarborough

VILLAGE/TOWN CONNECTOR

Village/Town Connectors are typically collector streets that connect residential and commercial centers, with low to medium density and a mix of residential and commercial uses. This street type often has more pedestrian and bike infrastructure such as sidewalks, bike lanes, and dedicated walking paths, as well as landscaped medians and landscaping buffers between walking paths and the roadway. Village/Town Connectors can have narrower ROW's than other street types such as Major Corridors and Rural Connectors to encourage slower driving speeds, and this street type also typically has lower traffic volumes. This street type should have sidewalks on at least one side and often includes a landscaping buffer and street trees, with limited street lighting.

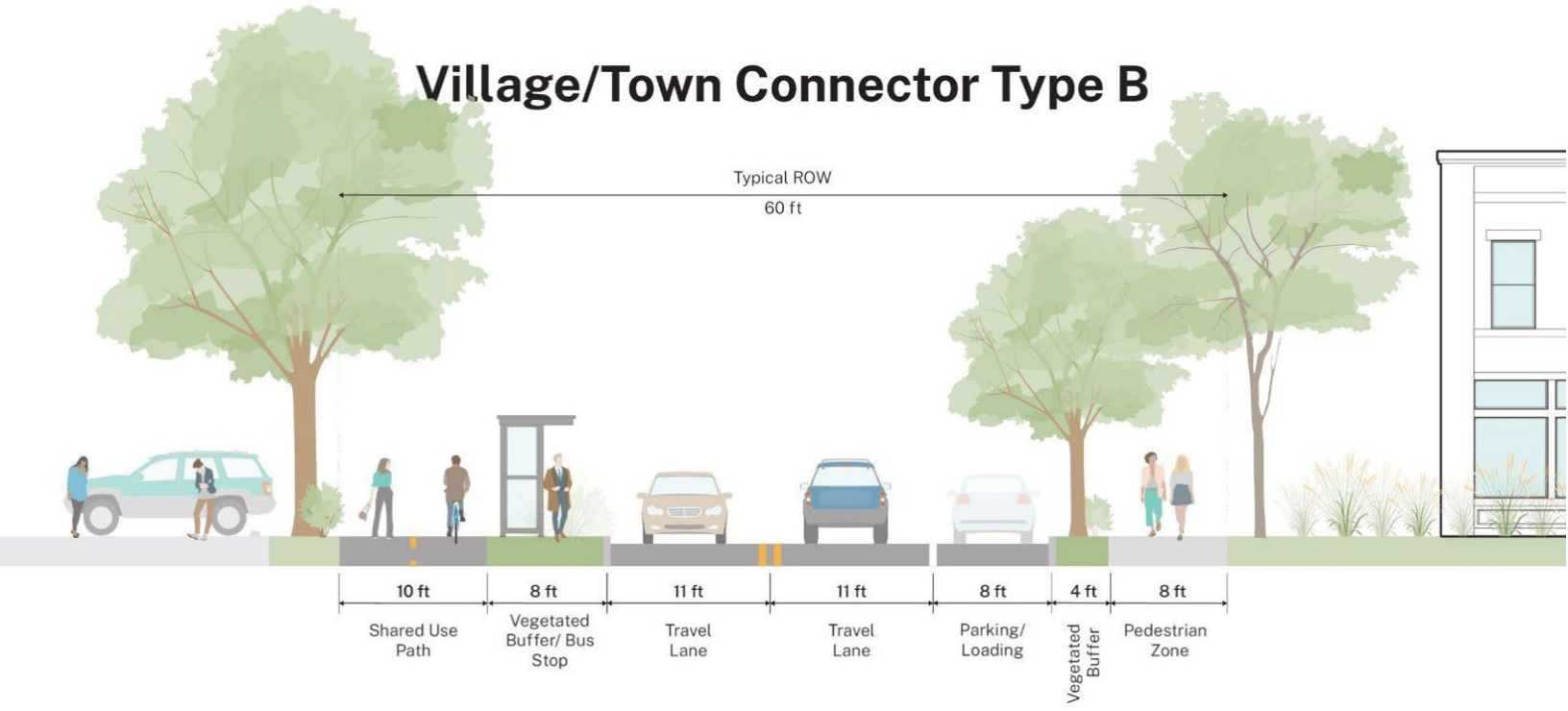
Village/Town Connector Type A



DESIGN TRADEOFFS

Where there are competing walking/rolling, biking, and parking/loading needs, consider repurposing a lane of traffic to add/enhance sidewalks, bikeways, and on-street parking/loading options. Where there is only one lane of vehicle traffic in each direction, consider relocating or removing on-street parking on one side of the street. Where parking is a lower priority it can be repurposed for other modes.

Village/Town Connector Type B

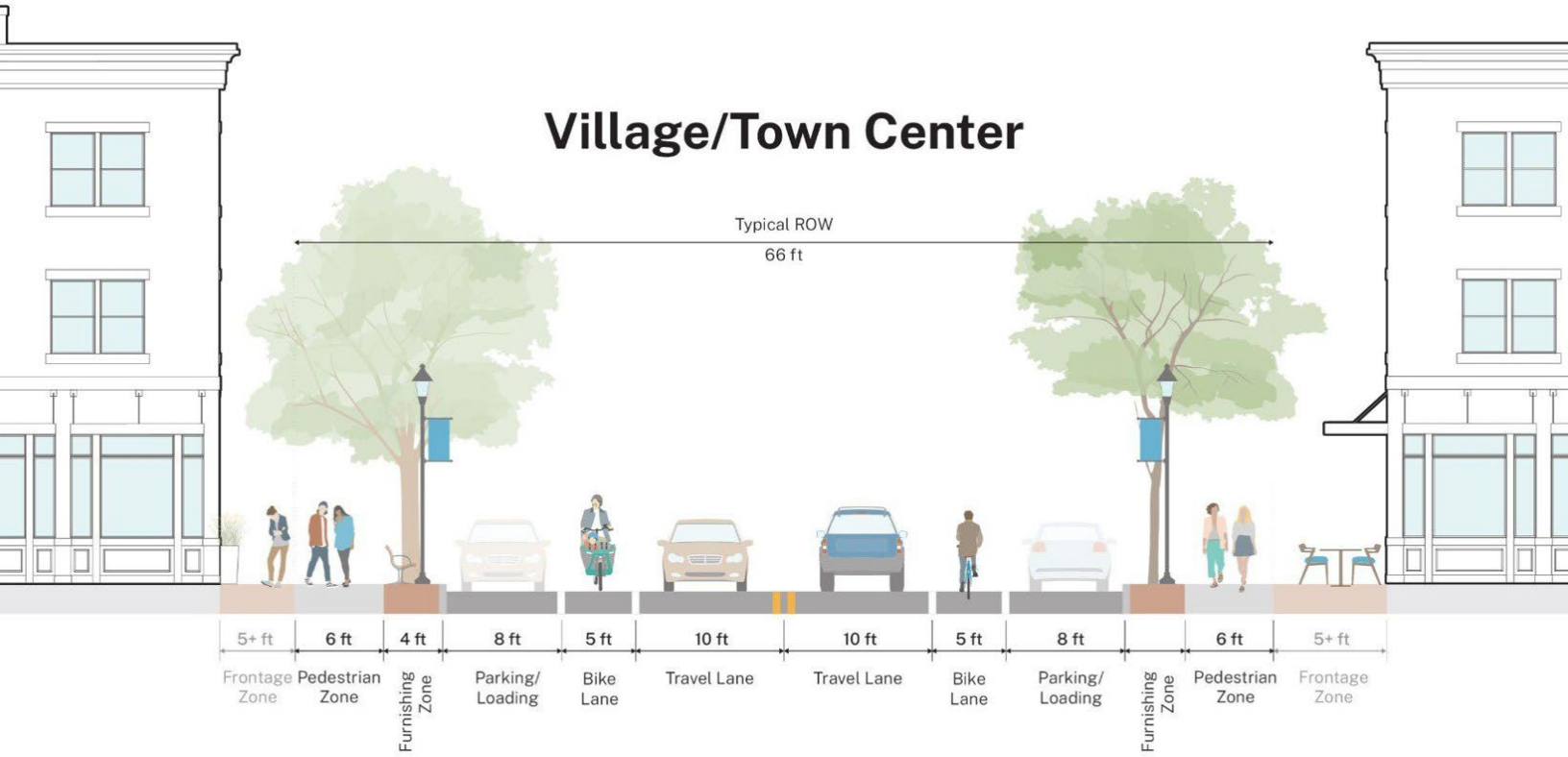


Eastern Road in Scarborough is an example of a Town Center Street because of its low traffic volumes and higher multimodal activity. Advisory lanes encourage more pedestrian activity along the corridor. Source: Town of Scarborough

TOWN CENTER STREET

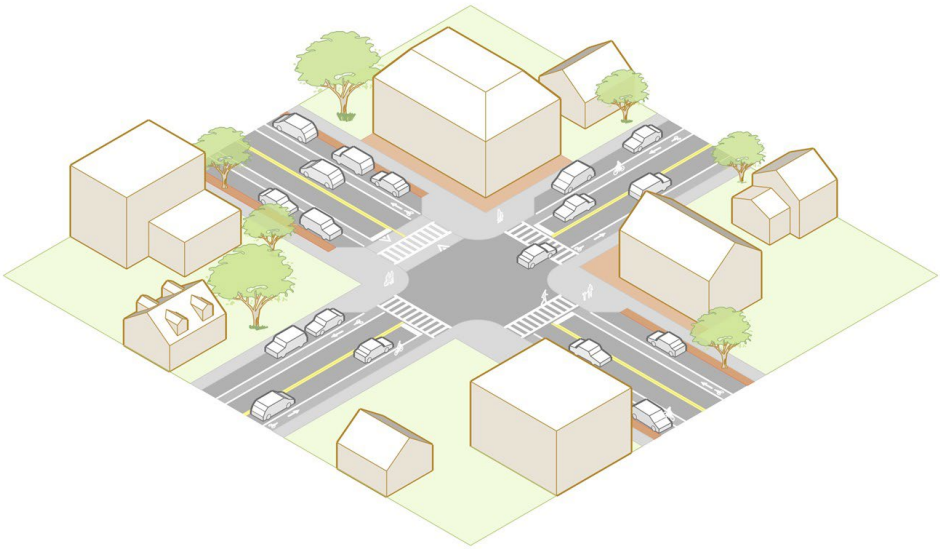
Town Center Streets are walkable, commercial, mixed-use, or multi-family residential centers and are typically local roads or short segments of collector streets. Multimodal activity is a higher priority on these streets than on Village/Town Connectors. Traffic volumes are typically low. This street type encourages residents and commuters to park once and walk or ride to nearby destinations, which reduces vehicle trips for short distances. Town Center Streets should include sidewalks, sometimes only on one side, as well as street trees and landscaping.

Village/Town Street Elements		
Roadway Context		
	Village/Town Connector	**Town Center**
Example Streets	Gallery Boulevard	Portland Farms Road
Functional Classification	Major or Minor collectors	Minor Collectors or Local roads
Zoning	Commercial with dispersed residential	Commercial, mixed-use, with dispersed medium-density residential
Setbacks	Moderate	Shallow to moderate
ROW	50'; new streets are 60'	50'; new streets are 60'
Traffic Operations	5,000 – 10,000 AADT	1,500 – 5,000 AADT
	1 lane per direction, primarily two-way	1 lane per direction, primarily two-way
Roadway Design Guidance		
	Village/Town Connector	**Town Center**
Typical Posted Speed Limit	25 – 45 mph	25 – 35 mph
Target Speed (preferred operating speed)	25 mph	
Design Vehicle	SU-30 (Single-unit truck)	
Control Vehicle	WB-50 (Intermediate semi-trailer)	
Intersection Curb Radius (min.-max.)	10' - 20'	
Lane Width	10' - 12'	
Paved Shoulder Width	≥4' if no sidewalk or bicycle facility present	≥4' if no sidewalk or on-road bike facility serves as shoulder
Treatment Guidance		
Traffic Calming	Horizontal Tools: most treatments are beneficial; where multimodal activity is high, prioritize permanent or temporary to permanent installations. Vertical Tools: consider large vehicle activity to determine what is appropriate. Traffic Control Tools: most beneficial where intersecting with other high-volume street types. Landscaping and Placemaking Tools: common and recommended to enhance the streetscape where there is available ROW.	
Transit	Where present, benches and shelters preferred	
Curbside Uses	Most common on Village/ Town Connectors, typically limited to one-side or off-street on Town Center streets.	



DESIGN TRADEOFFS

Since multimodal mobility is a higher priority on Town Center streets than Village/Town Connectors, consider traffic calming elements like curb extensions, speed humps, and enhanced pedestrian crossings on roads where speeds are higher. Where there are competing multimodal needs, consider repurposing a lane of traffic or parking to add sidewalks and placemaking treatments.



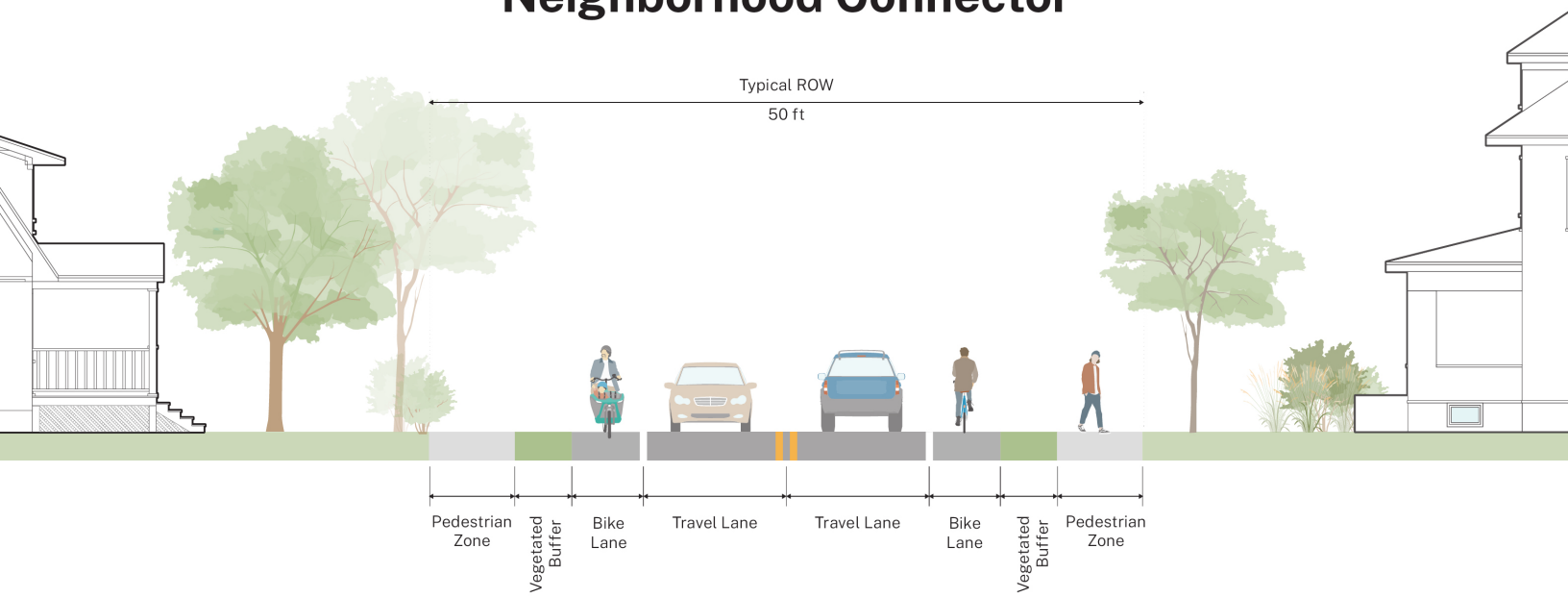
Conceptual Traffic Calming at the Intersection of a Village/Town Center and Village/Town Connector Street

Turning lanes like those on Payne Road in Scarborough, pictured here, are a frequent feature of Neighborhood Connectors.
Source: Nelson\Nygaard

NEIGHBORHOOD CONNECTOR

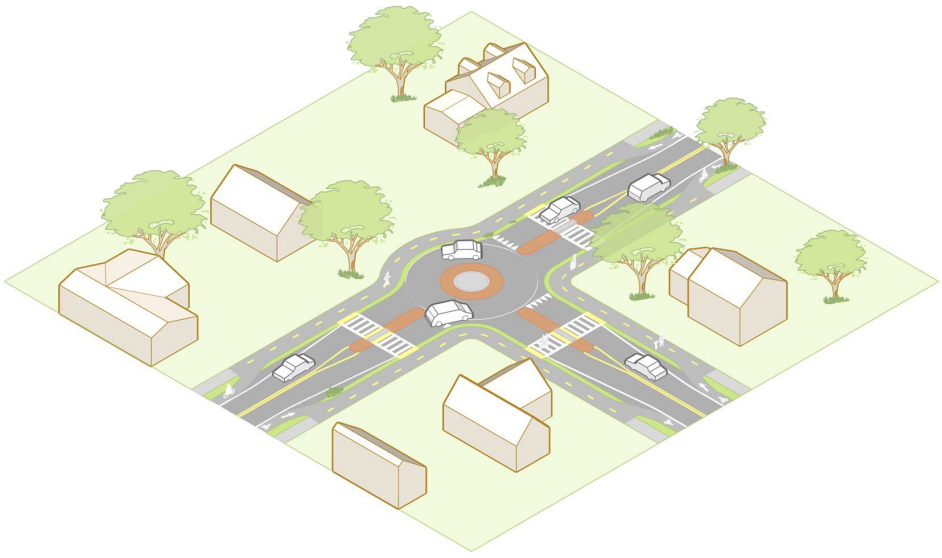
Neighborhood Connectors play an essential role in connecting neighborhoods to the larger transportation network. Land-use around Neighborhood Connectors is primarily residential with some civic uses like schools, parks, and libraries. Neighborhood Connectors are typically more suburban in character, with moderate setbacks and most buildings detached from one another, and this street type has lower traffic volumes and lower speeds than Major Corridors. They often connect residential and civic uses to business districts and sidewalks are infrequent or only on one side. Landscaped medians and marked crosswalks provide a pedestrian connection with Neighborhood Local streets.

Neighborhood Connector



DESIGN TRADEOFFS

Active transportation uses are a higher priority on Neighborhood Connectors compared to driving people and goods. Where possible, narrow travel lanes for safety or repurpose a lane of traffic to implement sidewalk, walking and rolling lanes, or bikeways. Repurpose a shoulder for a bike lane or a vegetated buffer and pedestrian zone where appropriate.



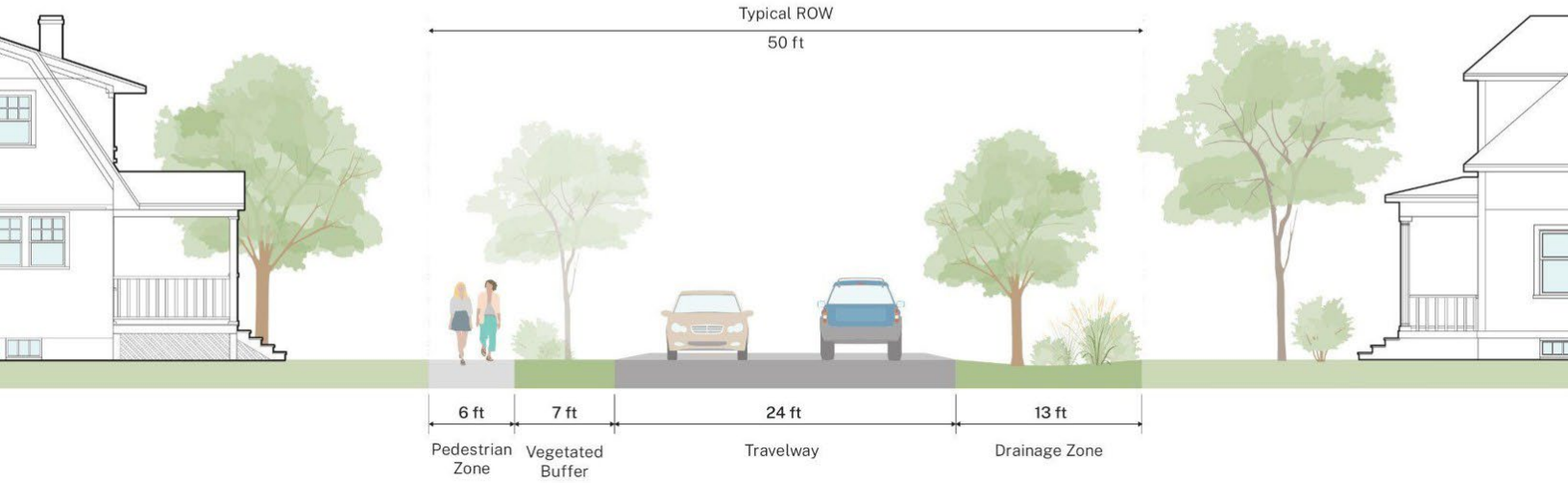
Conceptual Traffic Calming at the Intersection of Two Neighborhood Connectors

Pedestrian infrastructure such as marked crosswalks and bike lanes, seen here on Frontrunner Way in Scarborough, are a frequent feature of local streets. Source: Nelson\Nygaard

LOCAL STREET

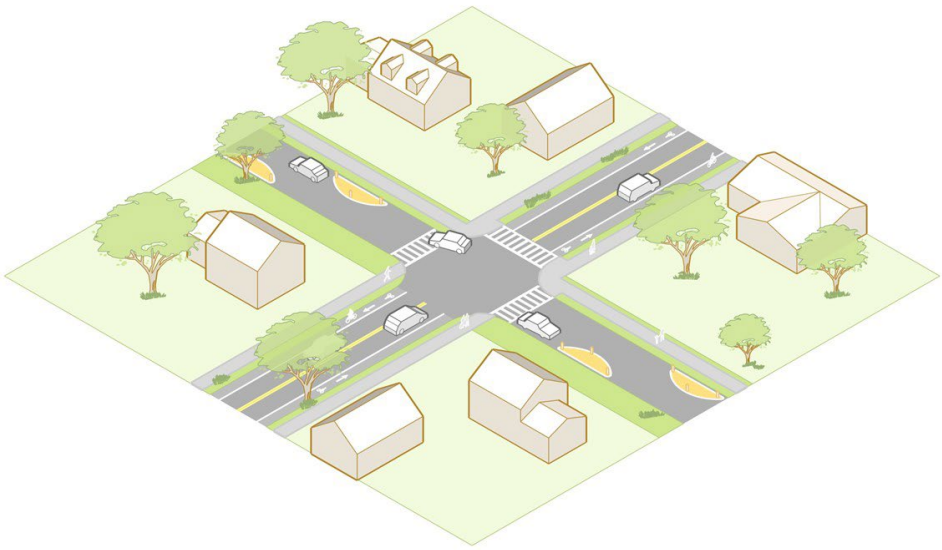
Neighborhood Local Streets are local roads with low traffic volumes that often end in cul-de-sacs or dead ends. They typically branch off from Neighborhood Connectors and are mostly used for local access by neighbors. In more dense areas there is street parking with limited parking turnover, otherwise local streets typically have driveways for residents. Newer developments typically have more pedestrian infrastructure, whereas other local streets constructed before many complete streets planning efforts lack sidewalks or have a sidewalk only on one side of the street.

Neighborhood Local



DESIGN TRADEOFFS

Biking and walking are a higher priority on Neighborhood Local streets compared to driving people and goods. To promote a safe shared street, prioritize safe speeds, corner and driveway visibility, and limiting through-traffic. Where speeds are higher, implement vertical tools such as speed humps, cushions and tables. Consider advisory bike lanes where biking activity is high to increase awareness and safe passing.



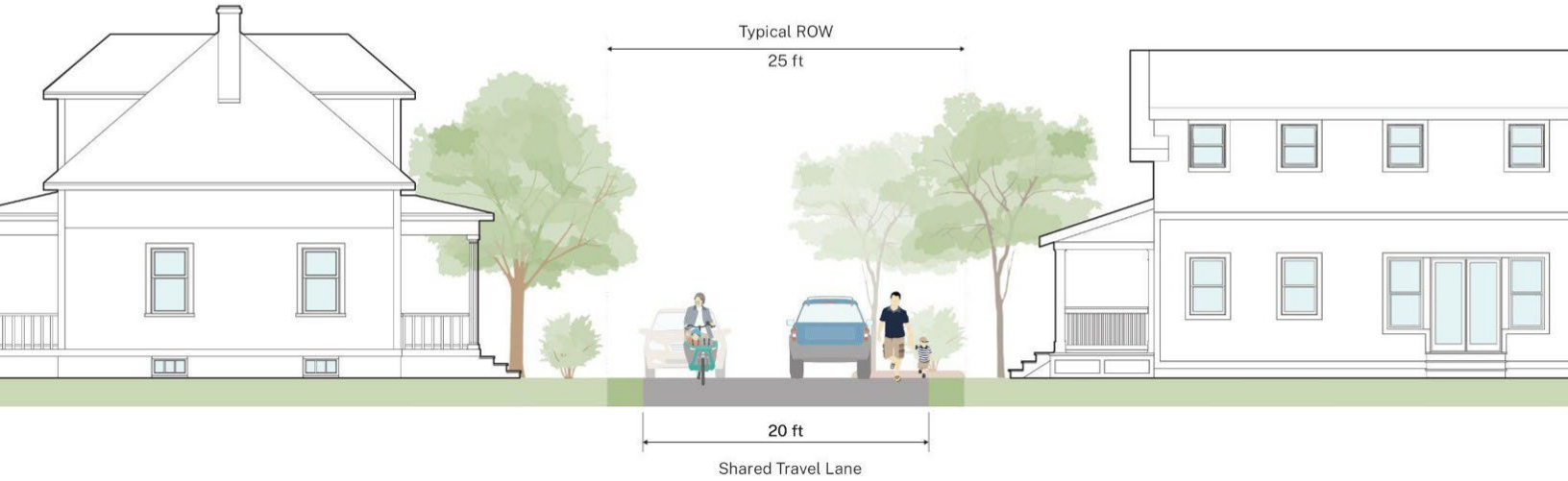
Conceptual Traffic Calming at the Intersection of a Neighborhood Local and Connector Street

Crosswalks and sidewalks on Bayview Avenue in Scarborough are a key feature of Beach Streets. Source: Nelson\Nygaard

BEACH STREET

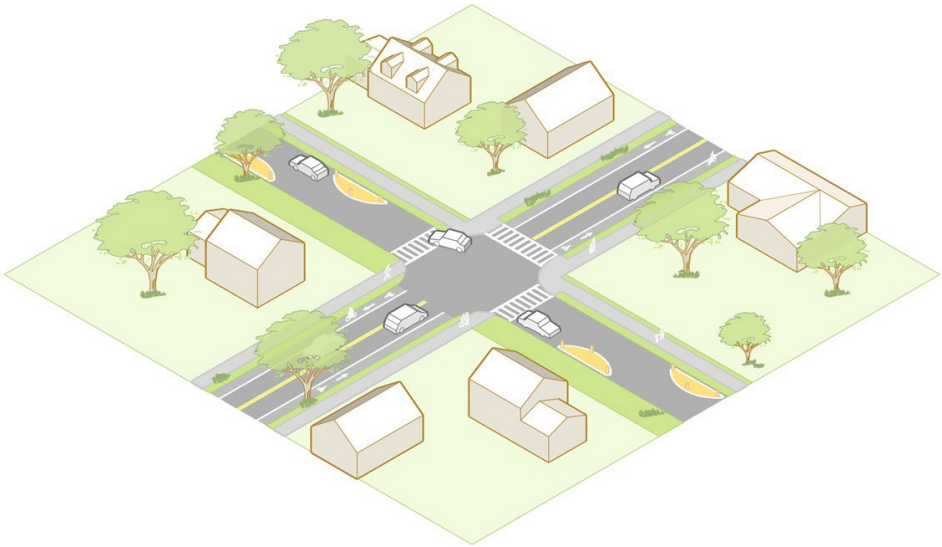
A type of Neighborhood Street, Beach Streets are adjacent to beaches. Beach Streets may see higher numbers of people walking, biking, and rolling than most other street types, as well as higher parking turnover from beachgoers. Beach Streets have very low traffic volumes and due to narrow rights-of-way, often accommodate only one-way traffic, have low vehicle speeds, and do not allow street parking. There can be parking on one side of the street on Beach Streets where width allows. Beach Streets often have marked crosswalks and can include sidewalks on one side of the street.

Neighborhood Beach



DESIGN TRADEOFFS

Biking and walking are a higher priority on Neighborhood Beach streets compared to driving people and goods. To promote a safe shared street, prioritize safe speeds, corner and driveway visibility, and limiting through-traffic. One-way operations can provide greater flexibility in ROW allocation, creating the opportunity to implement walking and biking infrastructure to enhance safety and comfort.



Conceptual Traffic Calming at the Intersection of a Neighborhood Local and Connector Street

Neighborhood Street Elements			
Roadway Context			
	Neighborhood Connector	**Local**	**Beach**
Example Streets	Fogg Road	Powderhorn Drive, Berry Road	Pearl Street
Functional Classification	Major or Minor collectors	Local roads	Local roads
Zoning	Residential, dispersed civic and commercial uses	Residential	Residential, Some commercial near beach
Setbacks	Shallow to moderate	Shallow	Shallow
ROW	50', new are 60'	25' – 50'	25' – 50'
Traffic Operations	1,500 - 10,000 AADT	500 – 1,500 AADT	
	1 lane per direction, two-way	1 lane per direction, some one-way	
Roadway Design Guidance			
	Neighborhood Connector	**Local**	**Beach**
Typical Posted Speed Limit	20 - 35 mph	25 mph	
Target Speed (preferred operating speed)	20 - 30 mph	20 – 25 mph	
Design Vehicle	DL-23 (Delivery truck)	DL-23 (Delivery truck)	
Control Vehicle	WB-50 (Intermediate semi-trailer)	WB-50 (Intermediate semi-trailer)	
Intersection Curb Radius (min.-max.)	10' - 20'	10' - 20'	
Lane Width	10' – 12'	10' - 12'	
Paved Shoulder Width	2' (min.) to 5' (incl. bike lanes)	None	
Treatment Guidance			
Traffic Calming	Horizontal Tools: better suited to Neighborhood Connectors where there is available ROW. Painted treatments are a cost-effective and more flexible option for Local and Beach Streets. Vertical Tools: speed humps and cushions are a priority because they calm traffic with little to no ROW impacts. Traffic Control Tools: calm traffic and improve safety where Local and Beach streets intersect with Neighborhood Connectors or other street types. Landscaping and Placemaking Tools: recommended on Neighborhood Connectors where ROW is available, typically limited to a vegetated buffer on Local Streets. Beach streets are often too narrow, but a priority for asphalt art.		
Transit	Where present, benches and shelters recommended.		
Curbside Uses	Typically limited to Neighborhood Connectors, often not needed on both sides of the street, little parking turnover.		

Marked crosswalks on Frontrunner Way help provide traffic calming for the Scarborough Downs neighborhood. Source: Nelson\Nygaard

TRAFFIC CALMING TOOLKIT

OVERVIEW

Traffic calming is the strategic use of design, geometry, and context to manage and slow vehicle speeds and reduce potential conflicts and risks across all modes. Traffic calming is an important set of tools and policy shifts that create safer communities, routes to school, connections to open space and more.

In 2024, the Town of Scarborough introduced a Traffic Calming Policy and application to support the safe and efficient movement of all people and address an increasing volume of traffic calming requests. The goal of the policy is to, "for residents or businesses to request further analysis by Town staff and/or Traffic Engineering Consultants to better understand the issues and provide an appropriate solution (Town of Scarborough Traffic Calming Policy, 2024)."

The guidance in this chapter expands on this policy by giving the Town a larger, more detailed toolkit to design and build safer streets in Scarborough.

Successful traffic calming can:

- Reduce driving speeds.
- Lower the risk of serious injury and fatal crashes.
- Increase attention, awareness, and visibility of roadway users and features.
- Improve the predictability of where to expect roadway users and features.
- Reduce traffic collision conflict points, pedestrian crossing distances, and exposure to high-speed vehicle traffic.
- Provide space between people driving, walking, biking, and rolling.
- Create opportunities for ecological improvements and placemaking installations, like trees, rain gardens, public art, seating, etc.
- Discourage unsafe driving behaviors, like speeding, recklessness, passing too closely, failing to yield to vulnerable users, etc.

To achieve these goals on different types of roadways, there are different types of traffic calming tools. These include passive measures that coordinate education and enforcement strategies, horizontal tools that encourage slower speeds by narrowing lane and roadways widths, vertical tools that physically raise parts of the roadway, traffic control devices that prompt drivers to slow down or stop, and landscaping tools that use greenery and beautification to create a stronger pedestrian realm. Many tools or treatments work best in a series, to achieve different desired safety outcomes.

Friction and Enclosure

Effective traffic calming creates ***friction,*** or a feeling of discomfort while driving fast, and a sense of ***enclosure***, slowing vehicles and protecting non-driving modes, that encourages safer behaviors without relying on traditional traffic enforcement. On streets where geometry encourages speed—such as long, straight streets with additional roadway capacity, and limited walking, biking, and rolling infrastructure design must *manufacture friction* through physical and or visual cues. These cues signal to drive slower. Additionally, successful traffic calming centers on **human factors**—addressing people's actual behaviors, considering where people already are, where they want to go, and how they experience streets—rather than treating speed as a purely technical and geometric problem.

Traffic calming treatments in Salem, MA. Curb extensions, planters, speed limit signs, plastic bollards, and tree canopy provide a sense of enclosure for drivers, limiting speeds upon entry to the street. Source: Neighborways Design

Planning Considerations

Design decisions are driven by costs, available ROW, the roadway context–simplified in this manual through the introduction of street types, and treatment benefits and tradeoffs–summarized in a matrix at the end of this chapter. Design guidance helps the Town maximize safety benefits, minimize costs, and balance tradeoffs supporting the expansion of the Traffic Calming Program and the Town's commitment to Vision Zero.

Human Activity

Traffic calming should begin with an understanding of **human activity**, in addition to street type and vehicle conditions like traffic volumes. Informed by robust community input, the Town of Scarborough should prioritize locations for implementation where people are most likely to walk, roll, bike, cross, or linger, including:

- Routes to parks, schools, senior living facilities, beaches, and other everyday destinations.
- Uncontrolled intersections where informal crossings and desire lines are visible.
- Areas with documented crash history, especially involving vulnerable populations like people with mobility impairments, older adults, and children.

Mapping desire lines and observing informal behavior ensure interventions align with how streets are actually used, not just how they are designed.

Sightlines and Geometry

Speed and safety are also closely tied to sight lines and roadway geometry. Locations with constrained visibility demand special attention, including blind corners and curves, blind driveways, and vertical and horizontal curves that limit visibility and affect drainage. In these contexts, traffic calming should focus on slowing vehicles on the approach and increasing the visibility of people crossing at intersections, giving drivers more time to perceive and respond to people in the roadway.

Cost Considerations

Addressing accessibility needs, modifying geometry, moving curbs, regrading roadways, and adjusting drainage infrastructure are often the largest cost drivers for traffic calming projects, aside from signal equipment at complex intersections. Grade changes like hills, and horizontal curves can significantly affect drainage patterns. Understanding drainage, roadway geometry, slopes, and accessibility early in the design process will allow the Town to select the most cost-effective traffic calming safety improvements.

Passive Strategies

The existing Town of Scarborough Traffic Calming Policy recommends considering passive traffic calming measures before considering more costly physical alterations. Passive traffic calming encompasses strategies such as education and enforcement, often using increased police presence, public meetings, and public outreach campaigns to educate and remind road users of the dangers of speeding and its impact on the community. These strategies are often short term in nature and are most effective when paired with more permanent interventions which can reinforce the message. Educational campaigns are most effective when performed simultaneously with the installation of other traffic calming measures, to educate the public on the purpose of the intervention and foster community buy-in.

Engagement and Public Support

Successful traffic calming depends on public engagement and support. Many residents support slowing speeds and creating safer streets, and often prioritization and budgets are the constraints for implementing traffic calming projects. If there is resistance, it often stems from the perception that projects are meant to make driving more difficult, wear and tear to vehicles, and concerns about emergency response times. The following traffic calming tools are designed to maintain access and reduce speeds to the target speed of the roadway with limited impacts to through traffic. As the Town begins to implement traffic calming tools, early and ongoing engagement with neighbors will help build political will, align designs with community priorities, and frame traffic calming as a safety and quality-of-life improvement for all residents of Scarborough.

Treatments with a cattail icon are particularly well-suited for rural roadways.

HORIZONTAL TOOLS

Horizontal tools narrow the roadway and/or require drivers to shift lanes, encouraging slower speeds. These tools also create opportunities to improve sightlines, provide space for people to wait to cross the street, beautify streetscapes, and better manage stormwater, snow storage, and utilities.

Sidewalks in Scarborough provide a safe space for residents to walk and roll. Source: Neighborways Design.

Sidewalks

Sidewalks are public spaces raised from the roadway along roads where people can walk and roll.

Key design considerations: The minimum standard width in Maine is 5 feet, 8-10 feet or greater is preferred on various street types like Village/Town Connector or Major Corridor streets that usually have mixed uses, destinations, and higher volumes of people traveling. Wide sidewalks and an expansion of other public realm elements like landscaping and street furniture encourage safer and more vibrant streets allowing a mix of activities. The running slope or grade should be no more than 5% for those using mobility devices, and a handrail is required for greater street slopes. Typical cross slopes shall be a maximum of 2%, consistent with PROWAG and MaineDOT. Accessible curb ramps shall be provided at all crossings when new sidewalks are constructed. To separate walkways from traffic, sidewalks should be raised, except on Neighborhood Streets where there is limited available ROW, see walking and rolling lanes.

Where they exist now: Sidewalks are most common in more dense areas including new developments like the Downs. They are most common on Major Corridor and Town Center streets where there is more activity. They can also be found on some Neighborhood Connectors, such as Maple Avenue.

Where they could exist in the future: The Town of Scarborough requires sidewalks in new developments regardless of density and land use to improve safety and connectivity. Where sidewalks may not be feasible in new developments, the Town collects an in-lieu fee from the developer to build sidewalks elsewhere in Scarborough where there are gaps in the network. Where the resources are available, the Town should explore all possible options for adding a sidewalk on one side of the street.

Walking and rolling lanes, showsn here on Ocean Avenue in Scarborough, provide a dedicated pathway for active transportation in locations where sidewalks are not possible. Source: Neighborways Design

Walking and Rolling Lanes

Walking and rolling lanes are painted, dedicated pathways for people walking, rolling, and biking on roads where typical raised sidewalks are not feasible or cost prohibitive.

Key design considerations: Painted walking lanes serve as a temporary or permanent solution where there are no existing sidewalks. They are best suited to low-speed, low-volume roadways that have high levels of pedestrian activity and limited right-of-way. Minimum widths and design guidance shall follow those of standard sidewalks. Current pavement condition, cross slope of the crown of the roadway, and crossing features should be considered to provide an accessible route for people using mobility devices and those with visual impairments. Consider painted symbols, mountable separators, and planters to create a buffer from moving traffic as feasible, particularly at intersections.

Where they exist now: Higgins Beach neighborhood, on Ocean Avenue between Greenwood and Bayview Avenues, approaching the beach. Pearl Avenue, in the same neighborhood, has a single walking lane on the south side of the street approaching Greenwood Avenue.

Where they could exist in the future: A walking lane can provide a lower cost alternative to new sidewalks on Beach Streets, Neighborhood Local Streets, and Town Center Streets, all streets with lower traffic volumes and where pedestrian safety is a priority.

Curb extensions like these on Stevens Avenue in Portland increase visbility for pedestrians and improve safety by decreasing crossing distances.
Source: GPCOG

Curb Extensions

An extension of the sidewalk narrowing the roadway to increasing visibility, expanding the public realm and decreasing the crossing distance. Curb extensions are suitable for all street types, and they can be used mid-block or at intersections.

Key design considerations: Curb extensions are typically used on straight, one to two lane streets with nearby catch basins, but can be designed for any street to narrow the roadway. They are especially beneficial when used in conjunction with parking lanes, located at mid-block crossings, on designated school walking/biking routes, and areas with pedestrian visibility issues. They usually require connecting to sidewalks and should be avoided where there are adjacent bike lanes in the roadway.

Where they exist now: Neighborhood Connectors intersect Industrial Roads, such as where Pine Point Road meets Snow Canning Road, and on Neighborhood Local Streets at the Scarborough Downs.

Where they could exist in the future: Intersections with crosswalks or mid-block crosswalks with high pedestrian activity, especially children and families near schools, daycares and summer camps. They are particularly helpful where Village and Town Center Streets and Neighborhood Connector Streets meet Rural Connectors and Major Corridors, to signal heightened pedestrian activity at intersections on busier corridors.

Painted bump-out, shown here in Portland, can provide a similar purpose as curb extensions on a temporary basis if permanent curb extensions are not possible. Source: Neighborways Design

Curb Radius Reduction/Bump-Outs

Reducing the curb radius through curb extensions (see previous tool), or paint or physical barriers at intersections, slows turning speeds and improves safety. Sometimes called “bump-outs,” these interventions improve visibility for all modes. They are suitable for multiple street types.

Key design considerations: Can be designed using a variety of materials including paint, mountable separators, metal bollards, boulders, or cast-in-place concrete where there are not curb extensions. Typically, the goal is to decrease the turning radius to as close to 90 degrees as possible to tighten and narrow the intersection, slowing turns down as much as possible. Designers should use the effective turning radii when considering turning movements for emergency response vehicles, delivery vehicles, garbage trucks, etc., especially where there are bike lanes. This treatment offers similar benefits to curb extensions at a lower cost and can be implemented along roadways with and without sidewalks. The best placement is where fresh snow falls outside the plow path and creates a natural neck down in the street. Designers can observe this during winter and then create an installation plan for spring/summer.

Where they exist now: There are currently no painted or physical clear corner treatments in the Town of Scarborough.

Where they could exist in the future: Ideal for multiple street types, but most helpful where there are sidewalks, pedestrian activity, and or people biking. Can be a lower cost alternative to curb extensions.

Daylighting, as seen here in Somerville, MA, helps improve sightlines for crossing pedestrians. Currently the Town does not install 'flex posts' due to maintenance concerns. Source: Neighborways Design

Daylighting/"Clear Corners"

Daylighting or clear corners treatments are regulated, painted or constructed barriers at crosswalks and intersections that explicitly prevent on-street parking to improve sight lines. Designed to "daylight" people walking and rolling in crosswalks.

Key Design Considerations: Typically designed to prevent parking within 20 feet of midblock crossings or intersections, or within 5 feet of driveways. Materials can include paint, striping, planters, boulders, cast-in-place concrete, or metal bollards. Daylighting can also be regulated through a town ordinance, code, or policy.

Where they exist now: There are clear corner treatments present in Scarborough's new developments, such as in the Scarborough Downs Neighborhood Streets.

Where they could exist in the future: Ideal for multiple street types including Beach Streets, Neighborhood Local Streets, and Town Center Streets, but most common where there are sidewalks, pedestrian activity, or people biking with the risk of "right hooks." Clear corners with paint and mountable separators can be a lower cost alternative at intersections where curb extensions are not feasible.

On-street parking, shown here in Portland, ME, can provide a buffer between traffic and people walking, biking, and rolling.
Source: GPCOG

On-Street Parking

Designated space for cars to park, providing a buffer between people walking, biking, rolling and vehicular traffic. Parking can visually narrow travel lanes and buffer sidewalks and bikeways from the roadway, improving safety and reducing traffic speed.

Key design considerations: Parking lanes are typically 8-10 feet. Parking shall be restricted at a minimum of 20 feet on the approach to crosswalks and intersections and 5 feet from driveways, to maintain safe sight-distances.

Where it exists now: Neighborhood Local and Neighborhood Connector streets, such as Pine Point Road.

Where it could exist in the future: Most common on Village/Town Streets. On-street parking is also a traffic calming tool on Neighborhood Streets to narrow travel lanes and slow drivers.

Advisory lanes like these in Scarborough can help improve safety by narrowing the traffic lanes.
Source: Town of Scarborough

Lane Narrowing, Advisory Lanes, and Edge Line Striping

Striping used for horizontal traffic calming can include narrowing lanes, adding advisory lanes for people walking and biking, and/or adding edge line striping.

Key design considerations: Travel lanes with transit, emergency vehicles, or snowplows should not be less than 10 feet wide. Advisory lanes can effectively narrow conventional travel lanes while also providing safe space for people walking and biking on low-volume rural roadways. Advisory lanes should be a minimum of 5-6.5 feet wide. MaineDOT recommends edge line striping in residential areas to narrow lanes, which can be especially helpful on one-way streets. Using optical speed bars or chevron-type markings between white edge lines can provide further traffic calming, especially when reducing lane widths.

Where they exist now: Lane narrowing is not common in the Town of Scarborough, but centerlines and edge lines are on some Neighborhood Connectors and Local Streets. Eastern Road has advisory lanes.

Where they could exist in the future: Along Neighborhood and Rural Connectors as roadways approach popular destinations like beaches, schools, trails, and other areas of high walking and cycling volumes.

Chicanes like these in Vermont improve safety and provide traffic calming by narrowing the roadway. Currently the Town does not install 'flex posts' due to maintenance concerns. Source: Howard Stein Hudson

Chicanes

Chicanes narrow the roadway mid-block requiring drivers to slow down and shift over. They are typically created using mid-block curb extensions—often with green infrastructure. Chicanes reduce speeds and enhance the streetscape and public realm.

Key design considerations: Typically on straight streets with sidewalks and curbside parking, but being applied more recently to rural roadways to prevent drivers from crossing the centerline. Designers must use proper lane widths and taper lengths based on the appropriate design speed (ws^2/L, per the MUTCD[1]). On low-volume streets, consider wider curb extensions to narrow a two-way street to a single lane yield condition, and consider green infrastructure in the new curb extension locations.

Where they exist now: There are currently no chicanes in the Town of Scarborough.

Where they could exist in the future: Chicanes could be applied to Town Center Streets, Local and Beach Streets, or to more rural settings like Neighborhood and Rural Connectors, especially with high pedestrian and bike activity.

[1] Per the MUTCD part 3: L= length of taper, w = width of taper, s= design speed. L = ws^2/60

Marked crosswalks and pedestrian crossing islands, seen here on Market Street in Scarborough, provide refuge space for pedestrians while crossing.
Source: Nelson\Nygaard

Pedestrian Crossing Islands

Pedestrian crossing islands provide a protected, refuge space in the middle of crossing multiple lanes to provide an area for pedestrians to cross one direction of traffic at a time. These islands can reduce speeds and improve yield compliance. They are typically implemented in concrete but can also be painted; use mountable separators, in street yield signs, and planters.

Key design considerations: Ideal for multi-lane crossings, especially at high crash intersections, crosswalks in proximity to schools and civic/community centers. Islands typically have a minimum width of 6 feet and need to provide tactile warning panels for people with low or no vision. If islands are planted, trees and plants should be a maximum of 28 inches to avoid blocking sightlines. At intersections, implement parking restrictions and lane tapers around the crossing islands, designed to 20 mph.

Where they exist now: On Major Corridors and on Neighborhood and Village/Town Connectors. Examples include the intersection of Route 1 and Scarborough Downs Road and Gorham Road by Scarborough High School and Hannaford Drive.

Where they could exist in the future: Most common on Major Corridors where there is available ROW but suited to multiple street types.

Rumble strips (shown here on Route 3 in Maine) alert drivers when they are drifting out of their lanes by creating noise and vibrations.
Source: MaineDOT

Rumble Strips

Textured or raised markers in the road that create noise and vibrations to alert drivers when they're drifting out of their lane. Prevents lane departure and can be used approaching stop signs to slow down drivers.

Key design considerations: Can be implemented at or near the roadway center line, edge lines, or shoulders. Placement should not preclude biking in shoulders. Where biking is expected, consider periodic breaks in the rumble strips for people biking to make turns or pass other cyclists.

Where they exist now: On the Highway Connector (701) between I-295 and Route 1.

Where they could exist in the future: Often applied to higher-speed roadways like Rural Connectors or Industrial/Business Access Streets; most common where there are shoulders.

Bike lane on Gorham Road in Scarborough, ME. Bike facilities like this bike lane provide a designated place for people to bike, which makes them more visible to drivers. Source: Town of Scarborough

Bike Lanes

Space in the ROW for people biking, usually designated by paint and sometimes separated from traffic with a physical barrier or raised to sidewalk level.

Key design considerations: Bike lanes are ideally designed as part of a connected network. On higher-speed and -volume roadways like Major Corridors or Rural Connectors, bike lanes should be protected or raised. Shared lanes or neighborways are recommended on Neighborhood Streets and streets with less than 2,000 vehicles per day and 20mph design speed. Designers should refer to the PACTS Regional Bicycle and Pedestrian Facility Design Guidance.

Where they exist now: Spurwink Road, and on newly updated roads, such as on Scarborough Downs Road. There is also on-street wayfinding signage as part of the East Coast Greenway that extends from the Eastern Trail and new separated bike lane and shared use path developments as part of the “Close the Gap” campaign.

Where they could exist in the future: Protected bike lanes would enhance safety on Major Corridors, Rural Connectors, and Neighborhood Connectors. Considered part of a network, bikeways can help connect destinations and complement the Eastern Trail.

Mountable separators, shown here in Portland, help protect bike facilities and make tighter turns. Currently the Town does not install 'flex posts' due to maintenance concerns. Source: Neighborways Design

Mountable Separators

Low, mountable, and durable separators provide a curb-like barrier to protect and enhance bike lane safety and curb extensions, discouraging motorists from entering the bike lane and making tighter turns. Used as a low-cost, low-maintenance buffer between traffic and active-transportation uses to prevent lane departure and enhance safety. Other similar barrier types to consider include rubber curb stops, cast-in-place or precast concrete, concrete buttons, and planters.

Key design considerations: They can be used as a barrier for bike lanes, curb extensions, or to reduce curb radii, with different design approaches for each use. They are typically rubber, bolted in, and durable, especially at intersections to be run over.

Where they exist now: There are currently no mountable separator treatments in the Town of Scarborough.

Where they could exist in the future: In support of curb radii reduction treatments at intersections with Town Center Streets and intersections with high pedestrian and cyclist activity, as well as along streets with bikeways and walking lanes.

Freestanding Gateways

Freestanding gateways are vertical materials placed on edge lines and centerlines in strategic locations, creating a “gateway”-like effect that slows drivers by introducing vertical friction, but without narrowing lane widths.

Key design considerations: Designers should ensure that large vehicles can maintain turning movements and provide height clearances for gateway materials. Typically used on roadways that approach Village/Town centers or other high-pedestrian use areas. Materials may include planters, signs, overhead wires with banners, constructed archways, strategically placed curb extensions with trees and banners, etc.

Where they exist now: There are currently no freestanding gateways in the Town of Scarborough.

Where they could exist in the future: On Neighborhood and Rural Connectors and near school crossings where lane narrowing is not possible due to ROW constraints or where other treatments are cost prohibitive.

VERTICAL TOOLS

Vertical tools physically raise portions of the roadway, prompting drivers to slow down to maintain a smooth ride and safely cross.

Raised crosswalk in Providence, RI. This type of treatment can slow vehicles at intersections without traffic signals. Source: Neighborways Design

Raised Crosswalks and Intersections

Crosswalks and intersections that are raised to or near sidewalk-level, to slow vehicles and make crossing the street safer and more comfortable. Can slow vehicles and improve crosswalk yield rates where there are no traffic signals. Raised intersections are typically the most expensive vertical traffic calming tool; they are most effective at intersections with high volumes of active transportation uses at all approaches.

Key design considerations: Raised crosswalks are ideal for relatively flat, straight, one to two lane streets with design speeds of under 30mph and less than 9,000 AADT, typically constructed with asphalt. While the 4-inch height is the typical standard, a lower reveal raised crosswalk can be used in areas where there is a higher percentage of trucks and buses depending on drainage and grading. Raised intersections are typically raised to the height of the sidewalk. Drainage and utilities are a major design consideration. Stop signs are recommended where yield compliance to pedestrians is an issue. MaineDOT recommends 6-foot-long ramps that transition up to the raised intersection. They may also be installed at some stop-controlled intersections as an additional safety measure.

Where they exist now: Raised crosswalks are currently located on private commercial properties, where they calm traffic and improve safety in parking lots.

Where they could exist in the future: Raised crosswalks are most appropriate at narrower unsignalized, high-activity crossings, typically on Neighborhood and Village/Town Streets, but also strategically targeted near parks, schools, senior centers, beaches, and other activity centers. They are not appropriate near hospitals or on busy emergency vehicle and transit routes. Raised intersections are recommended for intersections with design speeds of 30 mph or below, directly adjacent to schools, parks, trails, and other high-pedestrian activity locations like Neighborhood, Beach, and Village/Town Streets. There is a raised intersection planned at Scarborough Downs.

Raised intersection in Somerville, MA. This type of treatment is effective at intersections with high volumes of active transportation uses from each direction. Photo: Neighborways Design

Speed hump in Portland, ME. This tool is ideal on roadways with less public transit and lower traffic volumes. Source: GPCOG

Speed Humps, Cushions, and Tables

Speeds humps are raised mounds of asphalt that cover the entire width of a street, slowing traffic. Speed humps are primarily implemented on Neighborhood Streets with less freight and public transit activity and lower traffic volumes. Speed cushions are speed humps with slots or gaps for vehicles with wide wheelbases and people on bikes, scooters, or other forms of micromobility to pass through without impact. Speed tables are longer, raised mounds of asphalt or prefabricated rubber with a flat top usually applied in the middle of a block. They are similar to a speed hump but typically have a lower profile, making them compatible with Village/Town and Business/Industrial Access Streets.

Key design considerations: Speed humps are typically installed in a series and requires signage to alert drivers. Spacing must ensure humps are visible from one to the next to reduce speed spiking, and placement needs to consider drainage, utilities, and other roadway amenities. Maine DOT recommends speed humps be approximately 3-4 inches in height, parabolic in shape, between 12 feet and 14 feet in length. Town of Scarborough spacing guidelines for speed humps are 400 feet apart minimum, as well as 400 feet from intersections, 10 feet minimum from driveways, and 5 feet minimum from existing fixed objects like fire hydrants, utility poles, and drainage structures. Placement of speed humps need to consider drainage and runoff patterns to not create unintended flooding issues. Another safety consideration is for locations with curbs and sufficient curb reveal to prevent people driving from swerving onto the sidewalk. Signage is recommended at each location to alert plow drivers in winter to lift their blades when snow is present.

Speed cushions are ideal for higher-volume roadways with emergency vehicle, bus, and bike routes, where speed humps are not feasible. Like other vertical tools, they are typically installed in a series, spaced 250-500 feet apart on roads with speeds 20-35mph. MaineDOT recommends speed cushions to be 3-4 inches high and 12 feet long, with a level area of 6 feet on top of the speed cushion.

MaineDOT recommends speed tables be 3-4 inches high with a 10-foot level area at the top and two 6-foot ramps leading up to the top on either side, covering a total distance of 22 feet. While the 4-inch height is standard for most locations, a lower reveal speed table can be used in areas where there is a higher percentage of trucks and buses. Speed tables can be used on roadways with speeds up to 35 mph.

Where they exist now: There are currently no speed humps or cushions in the Town of Scarborough. A speed table is present on Maple Avenue in Scarborough.

Where they could exist in the future: Speed humps are ideal on Neighborhood Beach and Local Streets, and some Neighborhood Connectors where the speed limit is 30mph or below. Speed cushions are appropriate for multiple street types. The slots make them compatible with Village/Town street types where there is limited large vehicle activity. Speed Tables could be located on Neighborhood Connectors and Major Corridors such as Route 1, as proven in Saco.

Speed tables can also be applied as a raised crosswalk, like this example in Portland, ME. This tool is ideal as a mid-block treatment and appropriate for higher speed roadways. Source: GPCOG

Marked crosswalks like this one in Scarborough is one example of a traffic control tool that can indicate which users have the right of way.
Source: Town of Scarborough

TRAFFIC-CONTROL TOOLS

Traffic control tools are those that better clarify who has the ROW — like signals, intersection redesigns, pavement markings, and flashing beacons. All must follow engineering warrants set in the Manual on Uniform Traffic Control Devices (MUTCD) to advance through implementation.

Neighborhood traffic circles, like the one shown here in Portland, ME, can provide traffic calming by encouraging slower speeds and can replace stop-controlled intersections. Source: GPCOG

Neighborhood Traffic Circles and Mini Roundabouts

Neighborhood traffic circles are small roundabouts that often replace stop-controlled intersections to lower speeds, featuring a small island in the center. Traffic circles exist in the footprint of a typical neighborhood intersection. Mini roundabouts are larger than neighborhood traffic circles, but are still small roundabouts with entry deflection and a truck apron. Both tools slow down drivers while maintaining traffic flow.

Key design considerations Traffic circles must be visually distinguishable from the rest of the roadway pavement but can be created from a range of materials – including paint and posts, planters, colored pavers, or concrete with planted green infrastructure. The central island does not have to be raised – neighborhood traffic circles can maintain all existing street grades and drainage is typically not an issue. At some neighborhood traffic circles, larger left-turning vehicles must turn in front of the central island. To avoid conflicts traffic circles should be applied only to low-volume streets with limited to no freight activity and no transit or school buses. MaineDOT recommends neighborhood traffic circles be designed for streets 25mph or lower.

Mini roundabouts typically require more changes to intersection design and roadway geometry, making them more costly. MaineDOT recommends mini roundabouts be designed for streets 30mph or lower, and distinguishes them from neighborhood traffic circles primarily by their size, traversable islands/truck aprons, and yield control on approaches, which allows them to function as other roundabouts do. MaineDOT also recommends the circulating lane of a mini-roundabout to slope away from the center island of the traffic circle at a slope of 1 to 2 percent for drainage. MassDOT defines a mini roundabout as having a maximum diameter of 90 feet.

Where they exist now: There are currently no neighborhood traffic circles or mini roundabouts in the Town of Scarborough. A regular roundabout can be found on the Town Center Street, Eastern Road.

Where they could exist in the future: Neighborhood traffic circles are best suited to Neighborhood Local and Beach Streets with lower traffic volumes. Mini Roundabouts are suitable for most streets, aside from high-volume Major Corridors, because all vehicles can circulate.

A pedestrian hybrid beacon on Congress Street in Portland, ME. Pedestrians can activate this signal to stop traffic and safely cross. Source: GPCOG

Pedestrian Hybrid Beacons (PHB)

An overhead traffic-control device with button-activated red lights to stop traffic and help pedestrians cross. Also known as high-intensity activated crosswalk beacon.

Key design considerations: Can be applied at intersections or mid-block. They provide a safe crossing environment and when not in use maintain traffic flow. On multi-lane roadways pair with other traffic-calming treatments. MaineDOT does not recommend PHBs on roadways designed for more than 45 mph.

Where they exist now: There are currently no PHBs in use in the Town of Scarborough.

Where they could exist in the future: Suitable to multiple street types but most common on Major Corridors. PHB's can enhance safety at marked crosswalks in school zones, especially when crossing multiple lanes of traffic. PHBs can be considered where there is a higher volume of pedestrians.

RRFB on Black Point Road in Scarborough. Similar to PHBs, these are pedestrian-activated and support safe crossings. Source: Town of Scarborough

Rapid Rectangular Flashing Beacons (RRFB)

Button-activated flashing lights that alert drivers to people crossing the street, similar to pedestrian hybrid beacons but not overhanging the roadway, and with orange or yellow lights rather than red. RRFBs are a lower-cost alternative to a pedestrian hybrid beacon or traffic signal that increase pedestrian visibility and alert drivers to stop.

Key design considerations: RRFBs should be placed on both sides of a crosswalk or trail crossing, and/or in the median if a median refuge island exists. Using solar panels eliminates the need for a power source. Sight-distance needs to be considered and monitored as placement in town has led to high crash locations where they have been installed.

Where they exist now: An RRFB can be found on Gorham Road near Scarborough Middle and High School, at the intersection with Hannaford Drive and on Black Point Road and Pine Point Road at the Eastern Trail crossings.

Where they could exist in the future: Suited to multiple street types but most common on Neighborhood and Town Center Streets and Connectors.

Marked crosswalk in Portland, ME. This treatment helps alert drivers of people crossing by bike or foot to encourage safe yielding. Source: GPCOG

Marked Crosswalks

Pedestrian crossings typically marked by painted white or yellow stripes to indicate a designated crossing. Marked crossings enhance visibility to improve driver yield rates.

Key design considerations: MaineDOT promotes the use of high visibility crosswalks, particularly the Continental (piano key) style. Appropriate signage and additional yield bar markings may be needed to provide additional delineation to promote safety on higher-speed, higher-volume roads. Word and symbol stencils can also be used in a travel lane to raise awareness, such as STOP or STOP AHEAD to help raise driver awareness of what may be in the area. The FHWA MUTCD 11th Edition requires these stencils to be white, typically in block letters, and proportional to the intended road speed. While standard letter heights are often 8 feet, they may range from 6 feet to 10 feet for enhanced visibility. Crosswalks can be marked with standard road paint (less expensive up front but more intensive to maintain) or epoxy/thermoplastic (cost more up front but require less maintenance).

Where they exist now: Marked crosswalks are found on a variety of streets throughout Scarborough on Major Corridors like Route 1, on Neighborhood Connectors, and Village/Town Connectors.

Where they could exist in the future: They are suitable for all street types. On high-volume or -speed streets, such as Major Corridors and Rural Connectors, they should be paired with other traffic calming treatments to reduce speeds and improve safety.

Speed feedback signs, like the one shown here on Read Street in Portland, can alert drivers to their speeds and can be useful in school zones and other areas where there are more vunerable roadway users. Source: Neighborways Design

Speed Feedback Signs

Signs that contain an electronic radar detection device inside a small message board that measures an approaching car's speed and displays it in large, lighted numbers alongside the posted speed limit.

Key design considerations: Best targeted to roadway segments with chronic speeding and higher pedestrian activity. Can be portable (on trailers) or permanently installed. Solar panels remove the need for a power source. Should be paired with other traffic calming tools as speed signs are shown to have little effect on their own. Can be used to collect and store speed data for future planning uses, but do not gather personal identification data such as license plate numbers or pictures of drivers.

Where they exist now: Speed feedback signs can be found on Highland Avenue.

Where they could exist in the future: Speed feedback signs can be applied on all road types and can be particularly helpful in school zones and on Neighborhood and Rural Connectors.

LANDSCAPE AND PLACEMAKING TOOLS

Landscape tools use green infrastructure, public art, placemaking, and community branding to signal to drivers that they are in an area with higher pedestrian uses and to slow down.

Landscaped median on Gallery Boulevard in Scarborough. This treatment can help visually narrow roadways and prevent lane departures. Source: Town of Scarborough

Landscaped Median

A raised traffic median where some or all of the space is occupied by plantings, which visually narrows the roadway and provides an attractive streetscape. Can be combined with curb extensions, median refuge islands, and other traffic-calming tools. Landscape medians prevent lane departures, slow speeds, and help manage stormwater runoff.

Key design considerations: Landscaped medians should include breaks and refuge islands to allow for crossings and turning movements. They can extend part of or the full block. Curbing and plantings should be low profile to maintain sightlines. Plant species should be selected to be hardy to cold weather conditions and road salt during winter, as well as drought-resistant during summer.

Where they exist now: Landscaped Medians can be found on sections of Rt 1, such as near the intersection with Broadturn Road, as well as in new developments featuring natural grasses and trees on Scarborough Downs Road.

Where they could exist in the future: Best suited to Major Corridors, Village/Town Streets, or Rural Connectors with enough ROW available for a median.

Village gateways, like this Scarborough example, provide a signal to drivers they are entering a more populated area with multimodal activity. Source: Neighborways Design

Village Gateway Treatments

Village gateway treatments signal drivers to slow down as they are entering a denser area with more commercial and civic uses, with more pedestrian and bike activity. Village gateways reflect their community identity and can include a combination of horizontal and vertical traffic calming treatments as well as signage, lighting, artistic or interpretive banners, landscaping, asphalt art, or different colored or textured paving materials.

Key design considerations: Avoid reducing sightlines around curves or at access points with signs or tall vegetation. Signs should be outside the ROW. Local or state tourism bureaus may have jurisdiction over sign design and aesthetics.

Where they exist now: “Welcome to Scarborough” gateway signs can be found on sections of Route 1 and on Haigis Parkway.

Where they could exist in the future: Village Gateway Treatments can also be considered when approaching various neighborhoods and beaches of Scarborough, along Rural and Village/Town Connectors.

Asphalt art at Gorham's corner in Portland, ME. Asphalt art enhances visbility and encourages drivers to slow down, providing significant safety benefits at a low cost. Source: GPCOG.

Asphalt Art

Visual interventions on the roadway that draw drivers' attention to walking, rolling, and biking infrastructure, enhancing visibility and slowing turning vehicles, to improve safety and yield rates.

Key design considerations: Asphalt art can be applied at a crosswalk or intersection, or across the roadway if using temporary/interim paint. Designers should refer to the MUTCD and ensure painting is outside typical vehicle pathways to reduce wear on paint. The best placement is where fresh snow falls outside the plow path and creates a natural neck down in the street. Designers can observe this during winter and then create an installation plan for spring/summer. MaineDOT coordination and approval is required for asphalt art installations on state roads.

Where they exist now: There is currently no asphalt art in the Town of Scarborough.

Where they could exist in the future: Best suited to low-volume Neighborhood Local, Town Center Streets, and Beach Streets, typically at intersections or crosswalks, high pedestrian areas, and neighborhood centers.

Street trees on Pacer Way in Scarborough. This tool can provide a buffer between pedestrians and traffic, in addition to increasing the curb size.
Source: Town of Scarborough

Beautification Zones and Street Trees

The beautification zone supports more resilient and vibrant streets, using the space adjacent to the sidewalk for street trees, plantings, street furniture like benches, lighting, or trash cans, plantings, and public art. Extending the curb increases the size of the beautification zone and creates additional opportunities to enhance the streetscape.

Key design considerations: Beautification zones can be constructed in a range of widths from 2-10 feet, depending on ROW and intended use. PACTS' Bicycle and Pedestrian Facility Design Guidance describes and clarifies the different parts of a beautification zone. Designers should provide a minimum 18-inch buffer from the curb face for street trees and furnishings, and a 5-foot pedestrian clear zone. Plantings should be low-profile and hardy to maintain sightlines and be easy to maintain. Native tree species have higher tolerances for salt and drought. Columnar or low-stature trees can avoid disrupting utility wires. Street trees are not recommended in medians or curb extensions near crosswalks and intersections, to maintain visibility. They can be planted on sidewalks or in parking lanes. Deliberate plantings of trees in the public ROW can be applied to all streets, with priority at local intersections to maximize traffic calming benefits. Sometimes survivability is a concern on high-volume streets.

Where they exist now: The new development at Scarborough Downs features a beautification zone near the bus stop on Scarborough Downs Road. Many of Scarborough's Neighborhood Local and Connector streets are lined with trees on private property, such as along Winnocks Neck,

Broadturn and Pine Point roads, and in the Scarborough Downs development. Scarborough's marsh landscape lines much of Black Point Road.

Where they could exist in the future: Best suited to /Town Center Streets with more active transportation uses or where space allows. With native plantings, beautification zones can also be used to aid stormwater drainage on Major Corridors or Village/Town and Neighborhood Connectors.

Beautification zone extension in Portland. This treatment provides additional opportunities to enhance the streetscape and increase pedestrian space. Source: Neighborways Design

SUMMARY OF TREATMENTS BY STREET TYPE

The table below is a treatment matrix Scarborough can use to guide complete streets and traffic calming implementation. Organized by toolkit category, it identifies treatments that are preferred or context-specific by street type. Preferred treatments are generally well suited to that street type, while context-specific treatments may be appropriate depending on roadway conditions, land use, right-of-way, speeds, volumes, maintenance, and community needs.

Legend
Preferred
Context-Specific

Street Type:	Major Corridor	Rural Connector	Industrial/ Business Access	Village/Town Connector	Town Center Street	Neighborhood Connector	Local	Beach
Horizontal Tools								
Sidewalks	Preferred	Context-Specific	Context-Specific	Preferred	Preferred	Preferred	Context-Specific	Context-Specific
Walking and Rolling Lanes							Preferred	Preferred
Curb Extensions	Preferred	Preferred	Context-Specific	Preferred	Preferred	Preferred	Preferred	Preferred
Curb Radius Reduction/Bump-Outs	Preferred	Context-Specific	Context-Specific	Preferred	Preferred	Preferred	Context-Specific	Context-Specific
Daylighting/"Clear Corners"	Context-Specific	Context-Specific	Context-Specific	Preferred	Preferred	Preferred	Preferred	Preferred
On-Street Parking		Context-Specific	Context-Specific	Preferred	Preferred	Preferred	Preferred	
Lane Narrowing		Preferred			Context-Specific	Preferred	Preferred	
Chicanes		Context-Specific			Preferred	Preferred		
Pedestrian Crossing Islands	Preferred			Preferred	Context-Specific	Preferred		
Rumble Strips	Preferred	Preferred	Preferred					
Bike Lanes	Context-Specific	Context-Specific	Context-Specific	Context-Specific	Context-Specific	Preferred		
Mountable Separators					Preferred	Context-Specific	Context-Specific	Context-Specific
Freestanding Gateways		Preferred				Preferred		
Vertical Tools								
Raised Crosswalks and Intersections				Preferred	Preferred	Context-Specific	Preferred	Preferred
Speed Humps						Context-Specific	Context-Specific	Context-Specific
Speed Cushions		Context-Specific		Preferred	Preferred	Context-Specific	Context-Specific	Context-Specific
Speed Tables	Context-Specific	Context-Specific		Preferred	Preferred	Preferred	Context-Specific	Context-Specific
Traffic-Control Tools								
Traffic Circles						Context-Specific	Preferred	Preferred
Mini Roundabouts		Preferred		Preferred	Context-Specific	Preferred	Context-Specific	Context-Specific
Pedestrian Hybrid Beacons (PHB)	Preferred	Context-Specific	Context-Specific	Context-Specific	Context-Specific	Context-Specific		
Rapid Rectangular Flashing Beacon (RRFB)	Context-Specific	Context-Specific	Context-Specific	Preferred	Preferred	Preferred	Preferred	Preferred
Marked Crosswalks	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred
Speed Feedback Signs	Context-Specific	Preferred	Context-Specific	Context-Specific	Context-Specific	Context-Specific	Context-Specific	Context-Specific
Landscape and Placemaking Tools								
Landscaped Median	Preferred	Context-Specific		Preferred	Preferred			
Village Gateway Treatments		Preferred				Preferred		Context-Specific
Asphalt Art					Preferred		Preferred	Preferred
Beautification Zones and Street Trees	Preferred		Context-Specific	Preferred	Context-Specific	Preferred	Preferred	Context-Specific

BENEFITS AND TRADEOFFS MATRIX

Note: Treatments highlighted in blue are particularly well-suited to rural roadways.

Type of Treatment	Benefits	Tradeoffs	Cost Range	Cost Assumptions
Horizontal Tools				
Sidewalks	- Slows traffic by narrowing roadway width and providing protected space for active transportation uses - Improves public fitness and health, and increase community cohesion - Can increase property values and stimulate local economic activity	- Cost-prohibitive - ROW or property impacts - May require relocation or removal of drainage as well as fixed objects on private property	$$$$$	- $25-85 per linear foot, or $132,000-$448,800 per mile
Walking and Rolling Lanes (painted sidewalks)	- Similar benefits to sidewalks - Lower cost and easier to install than sidewalks	- Require ongoing maintenance to keep pavement markings fresh - Lacking physical barriers to prevent drivers from entering them	$-$$	- About $1.00–$2.00 per linear foot of standard striping, or $5,000-$10,000 per mile.
Curb Extensions / Bump-Outs (constructed)	- Reduces roadway width and crossing distances by extending the sidewalk. - Improves visibility, yield rates, and slows down turning vehicles at rounded intersections or slip lanes - Highly effective at reducing serious injuries and fatalities	- Can preclude the inclusion of future bike lanes; so not fit for potential future bike routes	$$$	– Approx $30,000+ per corner – Costs vary widely based on site drainage, geometry, and approach
Curb Radius Reduction/Bump-Outs (non-concrete)	- Lower cost compared to curb extensions with similar safety benefits - Tightens turning radius to create close to 90-degree intersections, reducing crossing distances and slowing turns - Bikes can pass through	- Less permanent and durable, does not prevent drivers from using the space	$-$$	- Depending on materials, $2,000-$20,000 per corner
Daylighting/ "Clear Corners"	- Improves visibility and safety by preventing the visual obstruction of parking near crosswalks and intersections	- If only painted without any vertical barrier, may not prevent people parking and improve visibility	$	- Depending on materials, $500-$10,000 per corner
On-Street Parking	– Narrows travel lanes and buffers sidewalks from the roadway, improving safety and reducing speeds – Can reduce need for off-street parking	– Can impact sightlines – Can impact snow plowing – Can conflict with bike lanes – Difficult to remove	$	- About $1.00–$2.00 per linear foot of standard striping, or $5,000-$10,000 per mile - For signage costs, assume $250/each, with four (4) signs per block in both directions

Type of Treatment	Benefits	Tradeoffs	Cost Range	Cost Assumptions
Lane Narrowing, Advisory Lanes, and Edge Line Striping	– Low-cost means of controlling speed by narrowing lanes to reduce driver speeds – Advisory lanes provide a dedicated space for people walking and biking improving safety – Edge lines widen the effective shoulder creating additional space for active transportation uses.	– Requires maintenance as stripes fade over time, especially in colder climates – Limited safety benefits in advisory lanes and from edge lines because there is no physical barrier to prevent lane departure	$	- About $1.00–$2.00 per linear foot of standard striping, or $5,000-$10,000 per mile
Chicane	– Slows drivers by eliminating long straightaways and creating new lateral turns. – Similar benefits to curb extensions	– Not recommend on emergency, transit, or school bus routes – Can create conflicts for snow storage, utilities, and on-street parking	$-$$	- $2,000-$15,000 each, depending on materials
Pedestrian Crossing Island	– Creates safe space for people walking to wait between multiple lanes of traffic, decreasing exposure – Improves crossing visibility, especially at unsignalized intersections – If involving lane narrowing, reduces speeds	– Can exacerbate snowdrifts on the roadway – Must keep the pedestrian refuge clear, especially in winter to prevent safety risks for people crossing – Only a moderate speed reduction potential when used alone	$$	- $5,000-15,000 each
Rumble Strip	– Increases safety by causing noise and vibrations that alert inattentive or drowsy drivers when they're drifting out of their lane – Low-cost, effective at reducing single-vehicle run-off-road and cross-center line crashes	– Shoulder rumble strips can have a negative safety impact on people riding bikes if there is not enough rideable space to the right of them	$-$$	– $0.10-$1.20 per linear foot, or $500-$6,000 per mile – In general, contracts where rumble strip installation is the primary item are lower in unit cost than other contracts
Bike Lanes	– Slows drivers by narrowing roadway / travel lane widths – Provides safe, dedicated space for multiple active transportation uses – Reduces crashes and encourages more use of active travel modes – Low-cost design options	– Can conflict with on-street parking and other curbside uses – If barrier-protected requires snow removal in winter	$$-$$$$	– Costs vary according to bikeway design, ranging from $10,000 per mile for shared lane markings to $1 million or more per mile for sidewalk-level bikeways
Mountable Separators	– Provides a curb-like barrier to protect and enhance active transportation uses or other treatments and discourage motorists from entering – Low, durable and mountable by multiple vehicle types – Inexpensive to install and maintain	– Not as visible to drivers as taller/sturdier protective barriers like flexible delineators, metal bollards, planters, or cast-in-place concrete	$	– $40-$50 each, depending on quantity
Freestanding Gateways	– Creates a visual narrowing effect using low-cost materials and without reducing lane widths	– Not very durable, may require frequent maintenance – Not effective on long stretches of roadway – consider tradeoffs of permanent lane narrowing	$	– Requires only 3-4 flexible delineators per gateway, ranging from $20-100 per flexible delineators, and $30-100 per linear foot for labor

Type of Treatment	Benefits	Tradeoffs	Cost Range	Cost Assumptions
Vertical Tools				
Raised Crosswalks	– Highly effective at slowing driver speeds and providing safer, more visible and comfortable crosswalks	– May require drainage and utility relocation. – Impacts snow plowing – Generally not installed on designated emergency routes or higher traffic roadways since they require all vehicles to slow down.	$$	– $10,000-$30,000 each
Raised Intersections	– Highly effective at reducing speeds within the intersection, where most conflicts occur	– Most expensive vertical calming tool, with varying costs depending on drainage – Generally not installed on designated emergency routes or higher traffic roadways since they require all vehicles to slow down	$$-$$$	– $30,000-$200,000 each
Speed Humps	– Highly effective at reducing speeds – Maintains existing parking and drainage patterns, street sweeping, and snow removal operations	– Generally not installed on designated emergency routes or higher traffic roadways since they require all vehicles to slow down – Potential for increased noise	$-$$	– $4,000-$10,000 each
Speed Cushions	– Gaps in between cushions allow emergency vehicles, buses, and people on bikes to pass through without changing elevation – Prefabricated cushions can be removed and reused, allowing for pilot projects before permanent installation with asphalt	– Gaps in between cushions also allow drivers of larger trucks and SUVSs to pass through without slowing – not as effective for slowing down all vehicles	$$	– $6,000-$12,000 each
Speed Tables	– Allows for existing drainage and parking	- Does not provide crosswalk features	$$	– $10,000-$15,000 each
Traffic Control Tools				
Neighborhood Traffic Circles	– Cost-effective speed reduction tool – Allows drivers to slow down, rather than come to a complete stop – Fits within the footprint of most 4-way intersections – Opportunity for additional drainage and landscaping	– Not suited for most transit, school bus, or emergency routes – If not mountable, challenging for large vehicles to navigate – Best suited to narrower, low-volume streets because of impacts to vehicle operations	$-$$$	– Costs vary widely depending on materials and durability, from $5,000 per circle to over $100,000
Mini Roundabout	– Reduces congestion and delay when used as a replacement for an all-way stop-controlled intersection while also moderately reducing speeds and collisions on busier roadways – Emergency vehicles are typically able to navigate the traversable center island	– Approach channels can complicate snow removal – ROW drainage and utility impacts	$$-$$$$	– Costs vary widely depending on intersection size and complexity, from approximately $25,000 to $500,000 per roundabout

Type of Treatment	Benefits	Tradeoffs	Cost Range	Cost Assumptions
Pedestrian Hybrid Beacon (PHB)	– Provides immediate feedback to the driver – Highly effective at improving yield rates – Cost-effective when compared to other traffic control tools – Push activated, maintaining traffic flow when not in use	– Requires yearly maintenance –checking solar array, batteries, alignment, push buttons – More expensive than RRFB, but less expensive than a full traffic signal	$$-$$$$	– Costs vary widely, can range from approximately $20,000 to $250,000
Rectangular Rapid Flashing Beacon (RRFB)	– Similar benefits to a PHB – Lower cost compared to a PHB	– Requires yearly maintenance –checking solar array, batteries, alignment, push buttons	$$-$$$	– Costs vary widely, can range from approximately $10,000-$50,000 per crosswalk
Marked Crosswalks	– Help give a roadway pedestrian context, letting drivers know they should expect pedestrians to be there, and thus slow down.	– If used alone, may not provide the desired level of protection or call sufficient attention to pedestrians to allow them to safely cross a roadway - other interventions like signage, flashing beacons, and/or vertical traffic calming tools can be used to enhance a standard marked crosswalk.	$	– $750-2,000 each
Dynamic Speed Display / Feedback Signs	– Low cost/intervention speed reduction tool. – May also suggest to drivers that speeds are being monitored or enforcement is nearby	– May only be effective for short stretches – Alone and without enforcement provides limited safety benefits – Changes to behavior are often temporary	$-$$	– $2,500 to $7,000 each depending on size, power source, data collection capabilities, and mounting technique
Landscape and Placemaking Tools				
Landscaped Median	– Beautifies the roadway, slows traffic, and provides space for green landscaping, such as native plantings or trees, to add natural canopy and manage stormwater. – Helps manage stormwater/ drainage.	- Costly to install and requires ongoing maintenance. - Potential ROW, utility, and drainage impacts. - Long straightaways with turning and crossing opportunities can encourage speeding.	$$$$$	– Same as sidewalk installation costs, plus additional $3.50-$9.50 per linear foot for landscaping.
Village Gateway Treatments	– Uses low-cost signage and landscaping to remind drivers to slow down as they enter activity centers.	– Use alone provides limited safety benefits.	$-$$	– Cost depends entirely on signage design and type of landscaping used.
Asphalt Art	– Uses a creative, community-building process to beautify streets and slow traffic. – Low cost, iterative and temporary tactical installation that demonstrates geometry changes and the potential for permanent solutions.	– Requires repainting maintenance every 1-3 years.	$$	– $25/sq ft or $10,000 - $25,000 per intersection
Beautification Zone and Street Trees	– Provides separation between pedestrians and moving and parked vehicles – Enhances places and community cohesion.	– Requires available ROW – Potential drainage and utility impacts	$-$$$$$	– Same as sidewalk installation costs, plus additional $3.50-$9.50 per linear foot for landscaping

Type of Treatment	Benefits	Tradeoffs	Cost Range	Cost Assumptions
	– Provides space for streetscape enhancements including green infrastructure and street furniture – Place for utilities out of the pedestrian path of travel – Enhances friction and sense of enclosure – Reduces noise – Provides shade canopy for sidewalk, parking, and multimodal travel lanes – Habitat creation – Stormwater management	– High installation cost, and ongoing maintenance (which can sometimes be done by volunteers or nearby property owners but typically requires costlier contractors or public workers)		– $1,000-$3,000 each for initial installation

TRAFFIC CALMING POLICY REFINEMENTS

In 2024, the Town of Scarborough introduced a Traffic Calming Policy and application to support the safe and efficient movement of all people and address an increasing volume of traffic calming requests. The goal of the policy is, "for residents or businesses to request further analysis by Town staff and/or Traffic Engineering Consultants to better understand the issues and provide an appropriate solution (Town of Scarborough Traffic Calming Policy, 2024)." The traffic calming application requires a simple description of the issue and 10 signatures from residents on the street in reference. In addition, there are four technical warrants the request must meet to move forward.

Existing Traffic Calming Warrants

1. Posted speed limit as set by MaineDOT is no greater than 35 mph.
2. The roadway cannot have more than two travel lanes or have a width of more than 30 feet.
3. 85th percentile speed is 5 mph greater than posted speed limit (based in the field assessment).
4. A minimum of 500 annual average daily traffic (AADT). "A minimum AADT threshold ensures that limited public funds are prioritized for streets where the highest volume of residents will benefit from safety improvements, maximizing the overall return on infrastructure investment."

**In addition,* the Traffic Calming Policy only applies to streets and local roadways maintained by the Town of Scarborough.

Under the current policy, if warrants are not met, the Town may consider passive non-physical interventions. Certain special conditions such as school zones may qualify outside of these requirements.

Existing Traffic Calming Request Process Summary

Under the current policy, a resident can submit a traffic calming request with a minimum of 10 signatures from abutters on the subject street. The Police Department reviews the application for completeness and conducts a Field Assessment of Traffic Conditions (FATC). If the FATC shows the street meets the minimum warrants, a Traffic Safety Review Panel determines the appropriate traffic calming level or possible treatments. Factors that inform their decision include residential density, bike and pedestrian, and heavy vehicle volumes. Based on feedback from peer municipalities with similar programs, if warranted, the Town first installs the traffic control device(s) as a temporary pilot to seek community input and verify the effectiveness of the interventions. The Town surveys all residents within 1,000 feet for feedback. Permanent interventions are only installed if 51% of respondents or more are supportive. Residents within 100 feet of the pilot interventions can petition them and have them removed.

Considerations for Policy Updates

The Town is interested in exploring a more robust set of eligibility requirements and criteria for evaluating and prioritizing Traffic Calming Requests as part of this effort. The Traffic Calming Toolkit

provides additional treatment options to address traffic calming requests and guidance to inform suitability. In addition, the manual introduces new street type classifications based on each street's characteristics and local context. The policy could consider integrating or updating current warrants to include street types and street type guidance.

Potential Eligibility Requirements or Warrants

In review of existing warrants and the eligibility requirements or warrants of other peer municipalities, we outlined several options and considerations for potential updates.

Street Types

The current policy includes a maximum roadway width of 30-feet and maximum existing posted speed limit of 35mph; this requirement may make some higher speed and volume roadways ineligible which may still benefit from traffic calming. These wider, higher speed corridors are typically under state jurisdiction, any traffic calming initiatives or requests require coordination with MaineDOT. This policy also relies on posted speed limits, which may not reflect desired speeds for these roadways. MaineDOT is responsible for setting the speed limits in Town and therefore needs to be consulted on all traffic calming initiatives or proposed changes to speed limits.

The town could consider using the new street type classifications that were developed as part of the Traffic Calming Toolkit. Using street types provides additional flexibility and Town discretion, while also making the process simpler for residents. Neighborhood Local/Beach, Neighborhood Connector, and Rural Connector streets have been identified as potential candidates for this policy.

Minimum Traffic Volume

The existing traffic calming policy requires 500 AADT. Doylestown Township (similar population) requires 1,000 AADT and 100 vehicles an hour during peak periods (Doylestown Township, Traffic Calming Policy, Bucks County, PA, 2023). A minimum AADT threshold ensures that limited public funds are prioritized for streets where the highest volume of residents will benefit from safety improvements.

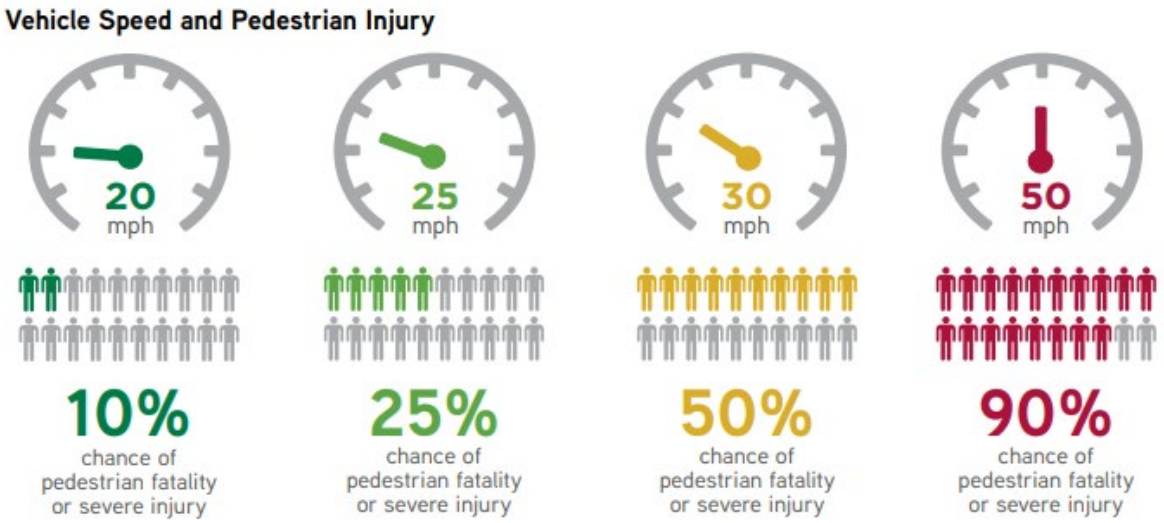
Street Segment Length

A minimum street length requirement ensures that traffic calming measures are only applied where the roadway geometry allows for excessive acceleration and provides sufficient distance for the safe spacing and visibility of traffic calming features. The town of Thomaston, Maine requires a street to be at least 500 feet long to qualify for traffic calming under their policy (Town of Thomaston, ME Traffic Calming Policy, 2025). Traffic calming interventions are designed to help slow cut through traffic and therefore may not be suitable on dead-end roadways which do not serve as access routes other than to abutting residences.

Speeding Criteria vs. Warrant

MaineDOT no longer uses only the 85th percentile of the posted speed limit as the primary factor to set and update speed limits. MaineDOT introduced a new context classification system that evaluates the land use, built environment and mobility needs of roadways and highways (MaineDOT Speed Limit and Context Memo, 2024). If using speeding as a warrant, evaluate it

based on the difference between the 85th percentile speed and the target or preferred operating speed, rather than the posted speed limit. Alternatively, treat speeding as a prioritization criterion rather than a binary warrant, assigning points or priority based on the target speed differential. Using the target speed provides a more context-sensitive approach, particularly on streets with higher posted speed limits that pose safety risks where roadway space is shared. This effort would need to be coordinated through MaineDOT, as the town does not set speed limits.



Speeding and risk of injury or fatality. Source: Nelson\Nygard.

Abutter Support

The existing Traffic Calming Policy provides abutters within 100 feet of the proposed intervention with the ability to petition for its removal. While recognizing the need for community support, the policy could include next steps for when an abutter does not support a proposed intervention to ensure safety can still be addressed on these streets. These next steps could include override measures whereby if a street scores enough points and receives enough overall neighborhood support the town may still proceed with traffic calming installation, or a policy to require consideration of an alternative similarly effective traffic calming intervention.

Potential Evaluation Criteria

In addition to requirements or warrants, traffic calming policies often include evaluation criteria to determine the suitability and priority of a request. Portland, ME, Orono, ME and Doylestown Township, PA provide examples of policies which include a scoring criteria, assigning point based on quantitative indicators outlined in the criteria. A scoring system is not required, but outlining a ranking system can make it easier to establish a clear threshold for requests and outline priorities. Scoring can also support process changes, for example a score above a certain threshold may not be eligible for removal (only relocation) through the resident petition process.

Crash History

Crash history establishes a strong justification for investments in traffic calming and is a key indicator an intersection or street should be prioritized.

Other traffic calming policies assign a point for each crash. The Town could consider two points for crashes involving someone walking and biking, and three for serious injuries or fatalities involving someone walking or biking. In addition, the Town could eliminate the possibility to petition for the removal of an intervention if there is a history of a fatal crash with someone walking or biking.

Key Abutting Destinations

Schools, parks, and other civic destinations often have higher concentrations of vulnerable populations including children, older adults, and people with mobility impairments. Providing additional points to streets with key abutting destinations helps to prioritize traffic calming in communities that need it most.

Existing Pedestrian Facilities

Streets where people are frequently walking, rolling, or biking in the roadway because there is no sidewalk, walking lane, or another form of dedicated space should be prioritized especially if cars are frequently passing at unsafe speeds. Assigning additional points to streets lacking these facilities helps prioritize improvements where users are most vulnerable to traffic. In addition, this may rule out some candidates where safety risks are lower because there is limited multimodal activity.

Walking, Rolling and Biking Activity

If the FATC includes walking, rolling, and biking counts, these can inform the criteria and prioritization process. There may be a threshold in which points are assigned, for example if a certain number of people or more are walking, rolling, or biking during the peak hour, points are assigned.

Traffic Volumes

Traffic can also play a role in prioritization as there are typically more multimodal conflicts where traffic volumes are higher. A tiered point system based on traffic volumes above the minimum threshold could further inform traffic calming prioritization.

Example Scoring Criteria

Doylestown Township, 2023

Criteria	Points	Basis for Point Assignment
Speed	0 to 30	Extent by which 85 percentile speeds exceed posted speed limit; 2 points assigned for every 1 mph.
Volume	0 to 25	Average daily traffic volumes (1 point assigned for every 120 vehicles).
Crashes	0 to 10	1 point for every crash reported within the past 3 years.
Elementary or Middle Schools	0 to 10	5 points assigned for each school crossing on the project street.
Pedestrian Generators	0 to 15	5 points assigned for each public facility (such as parks, community centers, and high schools) or commercial use that generates a significant number of pedestrians.
Pedestrian Facility	0 to 10	5 points assigned if there is no continuous sidewalk on one side of the street; 10 points if missing on both sides.
Total Points Possible	100	

City of Portland, ME, 2015

Sec. 28-265. Tables.

(a) Thresholds for traffic calming plan.

Threshold	Criteria	Max. Pts.
Volume	Vehicles per day X .05	100 pts.

28-93

City of Portland
Code of Ordinances
Sec. 28-265

Traffic and Motor Vehicles
Chapter 28
Rev. 11-16-2015

Speed Warrant	(85th percentile speed- Posted Speed Limit)	100 pts.
Children	1 pt./child for each child less than 12 years of age living on street (75 max.) 25 pts. For school on the street	100 pts.
Heavy Vehicles (HVPD)	2 pts. For each heavy vehicle defined as 2 axle-6 tire and larger. Applicable only to residential streets	100 pts.
Residential Density	75% - 25 pts. 80% - 30 pts. 85% - 35 pts. 90% - 40 pts. 95% - 45 pts. 100% - 50 pts.	50 pts.
	Total Points (max.)	450 pts.

Minimum of 200 pts. Required to qualify for traffic calming.

Town of Orono, ME, 2023

Criteria	Sub-criteria	Thresholds	Points
85th Percentile Speed (MPH)		7-9 over posted limit 10+ over posted limit	4 6
Annual Average Daily Traffic	At speed limit 25 MPH	500-1000 1000+	3 5
	At speed limit 30-35 MPH	1000-2000 2000+	3 5
Crash History		At least One Resulting Injuries Pedestrian Involved	2 4 8
Previous Measures		Attempted Proven Ineffective	4 6
Daily Non-Motorized Use		25-50 50+	4 6
Proximity to Pedestrian Generators		Within 1/4 Mile	4
Residential Frontage Percentage		25-50% >50%	1 2
Sidewalk Coverage		1 Side 1 Side Partial None	2 3 4
Building/Home Setback		Less than 20 ft None	1 2
Proximity to Higher Speed/Volume Roads		Adjoins 40+ speed limit road	1
Connected Adjacent Parking Spaces		30-100 100-200 200+	1 2 4
Transit Presence		Bus Stop or Route Within 1/4 Mile	2
		Total Points	_____

Suggested traffic calming tier by score:

Tier I - Behavioral: 5-20 points
Tier II - Visual: 21-40 points
Tier III - Physical: 41+ points

DESIGN GUIDANCE AND REFERENCES

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