CITY OF CUYAHOGA FALLS

STREETSCAPE

GUIDEBOOK

2024

Contents

01

ABOUT THE GUIDEBOOK

INTRODUCTION

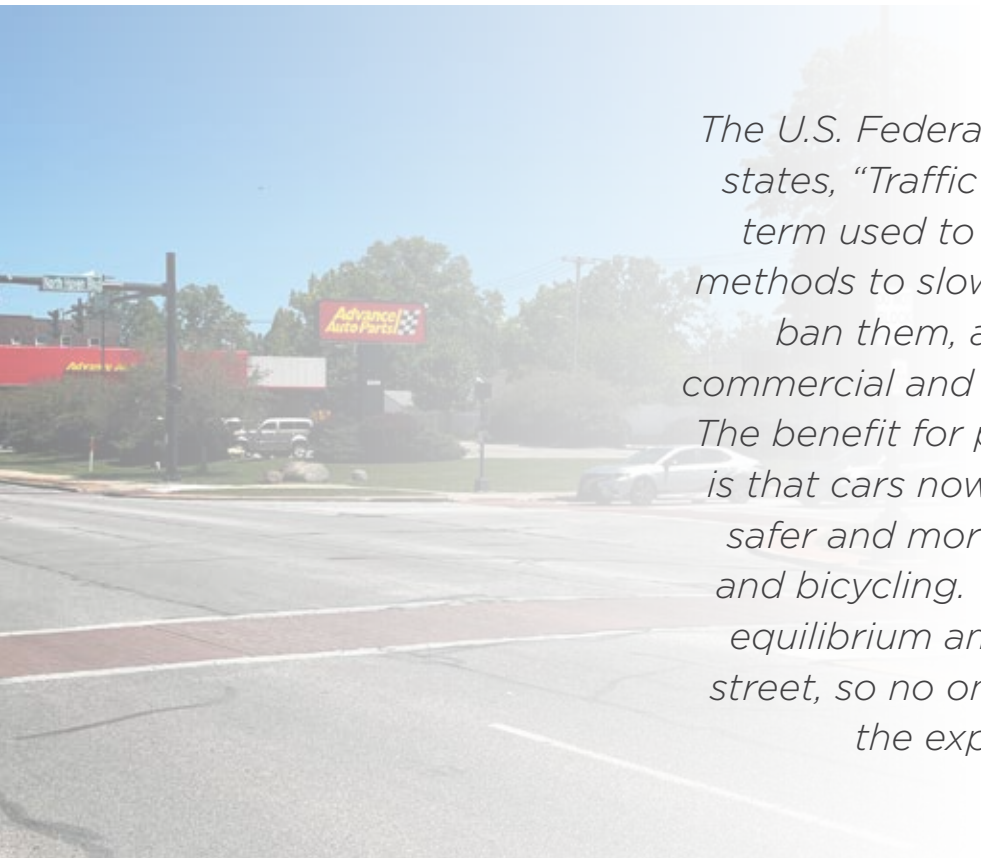
This guidebook is a tool for ongoing safety improvements and balanced mobility in the Cuyahoga Falls roadway network. It serves as a resource for city employees, city leaders, and residents to understand the preferred options for traffic calming and improvements in the city. When traffic and mobility concerns are identified throughout Cuyahoga Falls, the Guidebook provides intervention options that can be combined into an effective remedy for remediation, depending on the location and type of roadway impacted.

BACKGROUND & APPROACH

In collaboration with the studies of South State Street and Bailey Road corridors, the City of Cuyahoga Falls asked general mobility and streetscape-type questions of the community to better understand existing concerns and future needs. The responses and feedback were summarized and evaluated by city staff to create a set of principles to be used when evaluating future corridor and streetscape enhancements in the city. Those principles informed the streetscape categories and designs, that provide specific recommendations and interventions for future efforts.

TOOLKIT PRINCIPLES

1. **Ensure Universal Accessibility:** *Ensure streets serve our most vulnerable users, particularly seniors, children, and people with disabilities. Provide accessible, safe, well-lit, and dedicated facilities.*
2. **Design for Safe Speeds:** *Ensure safe design speeds through narrow travel lines, tight corner radii, and other speed reduction measures that help reduce exposure and rise for vulnerable users.*
3. **Reconfigure the Space:** *Change geometries to prioritize active and sustainable mobility choices. Provide dedicated facilities that prioritize pedestrians, cyclists, and collective transportation use.*
4. **Accommodate Diverse Uses:** *Ensure efficient and diverse uses of streets by providing spaces for social interactions and gatherings, cultural activities, and commercial uses. Incorporate green infrastructure strategies wherever possible.*
5. **Develop Context-Driven Solutions:** *Design streets that are informed and influenced by their place in the network, proximity to destinations, adjacent land use, and density.*
6. **Start Somewhere:** *Move curbs, change alignments, reclaim space, and redirect traffic. Use a phased approach for major redesigns, consider interim design solutions, and identify areas of political and financial support. Find somewhere to start the transformation, and act now!*



The U.S. Federal Highway Administration states, "Traffic calming is a [European] term used to describe a full range of methods to slow cars, but not necessarily ban them, as they move through commercial and residential neighborhoods. The benefit for pedestrians and bicyclists is that cars now drive at speeds that are safer and more compatible to walking and bicycling. There is, in fact, a kind of equilibrium among all of the uses of a street, so no one mode can dominate at the expense of another."

02

STREETSCAPE DESIGNS

STREETSCAPE

This section provides a menu of potential approaches to streetscape design. Since many different options are possible, this provides the background for understanding a variety of techniques, which can then be used depending on the specific characteristics of the corridor.

This section provides a menu of potential streetscape design options throughout the city. These designs are divided into seven general categories and explained in more detail, including:

- General descriptions
- Benefits and drawbacks
- Overall impacts (traffic speed, traffic volume, cost)
- Other key factors assigned a rating criteria
- Applicable roadway classification

STREETSCAPE CATEGORIES

Intersections

This category includes physical changes to an intersection that either create a narrowed approach, change traffic behavior, and/or limit vehicle access. This category also includes district designations through aesthetic treatments.

Lane/Corridor Impacts

This category includes changes that physically or visually narrow a lane or corridor through medians, pinchpoints, striping, or landscaping.

Roadway Edge

This category includes visual cues like landscaping and street furniture. They influence driver behavior by creating a sense of reduced speed or caution.

Pedestrian-Focused

This category includes pedestrian-friendly features such as crosswalks, sidewalks, and pedestrian refuge islands. These integrations enhance overall safety and accessibility.

Green Infrastructure

This category includes enironvnmental-friendly features such as permeable pavers and bioswales. These integrations improve water quality and are cost effective measures.

Bicycle Improvements

This category includes bicycle-friendly features such as sharrows, bicycle lanes, and cycle tracks. These integrations enhance overall safety and accessibility, promoting a multi-modal network.

Regulatory

This category includes signage that can help control traffic flow in specific areas and during specific times of day. This also includes signage with built-in alert systems, such as lights or sounds, to direct drivers' attention to upcoming traffic pattern changes.

These methods are not mutually exclusive, and can often be combined together to create a cumulative successful impact.

STREETSCAPE DESIGNS

INTERSECTIONS

- Neckdown/Curb Extension
- Gateway Treatments

GREEN INFRASTRUCTURE

- Permeable Pavers
- Bioswales

LANE/CORRIDOR IMPACTS

- Visual Lane Narrowing
- On-street Parking (Parallel & Angled)
- Pinchpoints
- Medians and Refuge Islands
- Wayfinding/Signage

BICYCLE IMPROVEMENTS

- Sharrows
- Bike Box
- Bicycle Lane
- Buffered Bicycle Lane
- Cycle Track

ROADWAY EDGE

- Sidewalks Improvements
- Edge Treatment (Curbs)
- Landscaping
- Street Furniture
- Street Lighting

REGULATORY

- Stationary Radar Signs/Speed Display Board
- Advance Yield/Stop Signs
- Signal Timing and Phasing

PEDESTRIAN-FOCUSED

- Pedestrian Refuge
- Rasied Crosswalks
- High-Visibility Crosswalks

METHODOLOGY

The purpose of this section is to explain the specific criteria that were used to rate the impacts and effectiveness of the traffic calming measures as part of this study. Each traffic calming method cutsheet includes a table showing the rating criteria and a "meter" that represents the level of impact.

Traffic calming methods that are the most impactful in each criteria will have more bubbles filled in. The methods were rated based on the existing context, typical performance, as well as the wants and needs of Cuyahoga Falls.

RATING CRITERIA

OVERALL IMPACT

The most important and impactful rating criteria includes whether a particular traffic calming method will ultimately reduce the speed and/or volume of vehicular traffic.

REDUCES TRAFFIC SPEED: Does the traffic calming method consistently lower vehicular speed? ***(A higher score indicates slower traffic speed)***

REDUCES TRAFFIC VOLUME: Does the traffic calming method consistently lower vehicular volume? ***(A higher score indicates reduced traffic volume)***

Ability to Implement

The level of effort it would take to implement these traffic calming methods is an important consideration. These factors include the cost-benefit ratio of the project, the level of difficulty it would take to maintain the method, and how easily the method could be implemented in a variety of locations and situations.

COST BENEFIT: Does the effectiveness of the traffic calming method outweigh the financial burden? ***(A higher score indicates the benefits of the method outweighs the cost)***

EASE OF MAINTENANCE: Would maintenance of the traffic calming method be frequent, costly, or overly complicated? ***(A higher score indicates that the method is easy to maintain)***

FLEXIBLE DESIGN: Can you apply this traffic calming method in a lot of different areas or situations? ***(A higher score indicates that the method can be applied to multiple areas)***

Active Transportation

With the increased integration of multi-modal transportation options, it is important to consider the comfort and safety of pedestrians and cyclists.

PEDESTRIAN-FRIENDLY: Does the traffic calming method incorporate a clear understanding of pedestrian and vehicle traffic flow through physical design or regulatory measures? ***(A higher score indicates that the method includes a pedestrian-friendly design)***

CYCLIST-FRIENDLY: Does the traffic calming method incorporate a clear understanding of cyclist and vehicle traffic flow through physical design or regulatory measures? ***(A higher score indicates that the method includes a cyclist-friendly design)***

Traffic and Parking Considerations

The traffic calming measures will have an impact on personal and public service vehicles regarding parking and accessibility.

PARKING: Does the traffic calming method allow for more on-street parking? ***(A higher score indicates that the method does not impact or increases on-street parking)***

AUTO ACCESS: Does the traffic calming method make it more difficult to access destinations? ***(A higher score indicates that the method does not strongly impact vehicle accessibility)***

EMERGENCY VEHICLE ACCESS: Does the traffic calming method increase the response times of emergency vehicles? ***(A higher score indicates that the method does not strongly impact emergency vehicle response times)***

SNOWPLOW/STREET SWEEPING: Does the traffic calming method make accessibility more difficult for snowplows and street sweeping vehicles? ***(A higher score indicates that the method does not strongly impact the effectiveness of snowplow or street sweeping vehicles)***

Environmental Factors

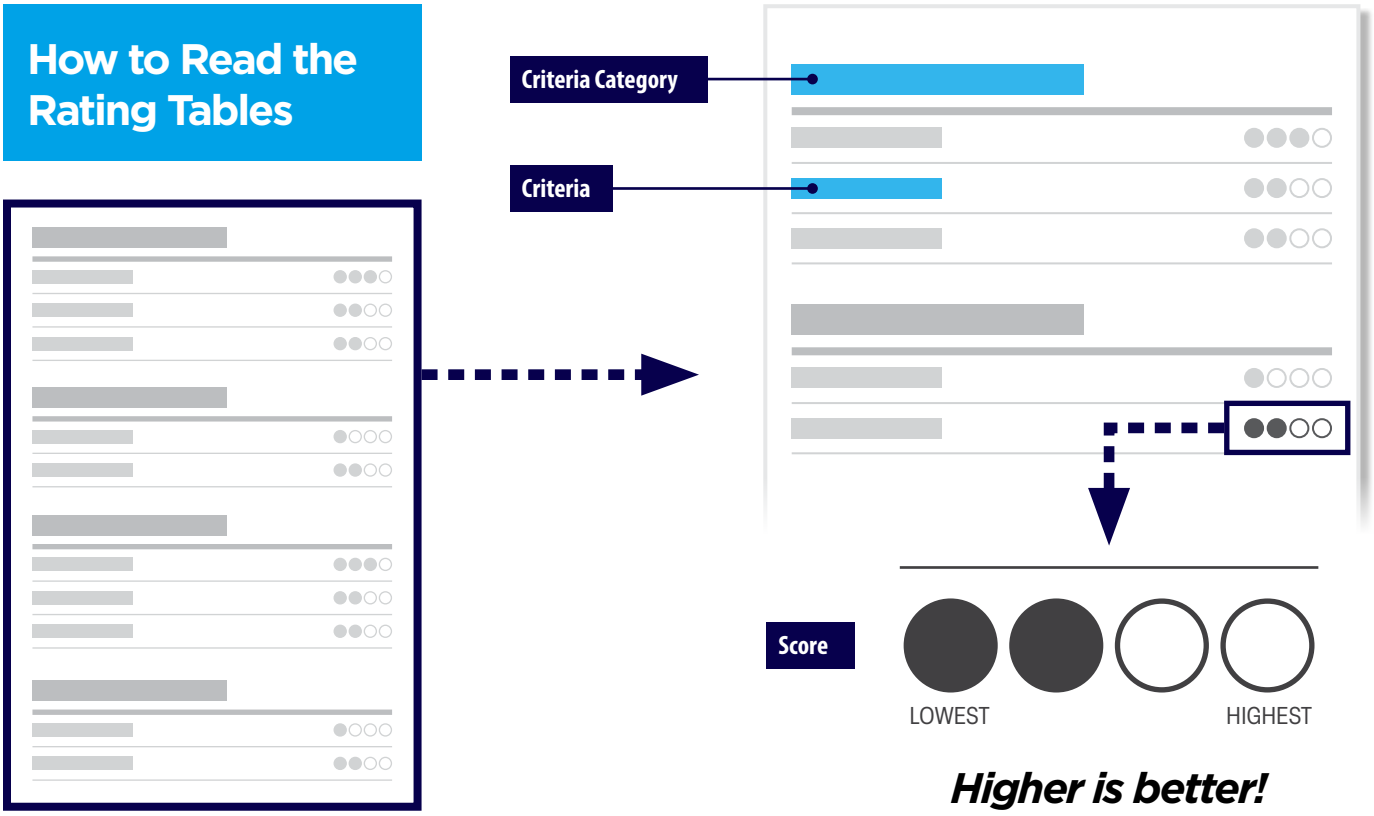
The traffic calming methods were rated based on their impact on environmental factors including comfort/atmosphere and physical structure.

NOISE POLLUTION: Does the traffic calming method increase the noise caused by traveling vehicles? ***(A higher score indicates a lower impact on noise pollution)***

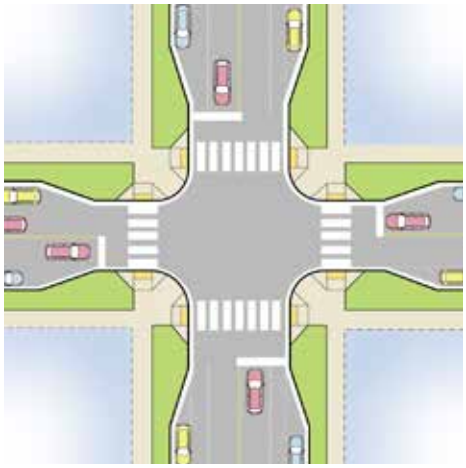
UTILITY / RIGHT-OF-WAY IMPACTS: Does the traffic calming method disturb or impede on the existing right-of-way or utility infrastructure? How complicated would it be to adjust the existing right-of-way or utility infrastructure to accommodate the traffic calming method? ***(A higher score indicates a lower impact on right-of-way and utility infrastructure)***

AESTHETIC IMPROVEMENTS / PUBLIC SPACE: Would the traffic calming method enhance or take away from the aesthetics of the pedestrian amenities, such as public spaces or streetscape features? ***(A higher score indicates a more positive impact on aesthetics and public space)***

How to Read the Rating Tables



NECKDOWN/CURB EXTENSION



Neckdowns or curb extensions narrow the roadway by extending the curb at key intersections and mid-block locations. This results in reduced corner radii at intersections to make turning movements tighter. Mid-block bulbouts are typically extensions of a tree lawn to narrow roadways and define on-street parking areas.

BENEFITS

- Inhibits the speed of turning vehicles
- Gives pedestrians a better chance to see and be seen by approaching traffic
- Adds sidewalk space, thereby shortening the distance to the other side of the street

DRAWBACKS

- Effects on vehicle speeds are limited due to lack of deflection
- Must check drainage due to possible gutter realignment
- Utility relocation may be required, especially drainage inlets
- Slows emergency vehicles and large transit vehicles.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●●○○

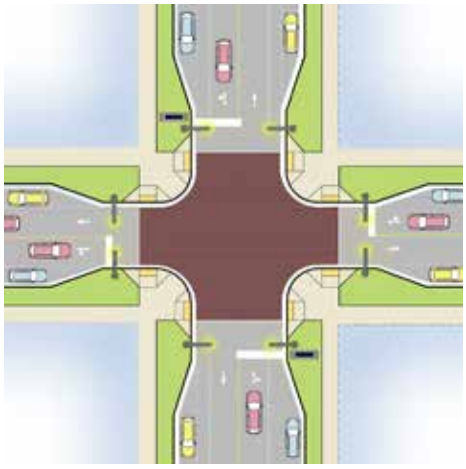
Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	N/A
Emergency Vehicle Access	●●○○
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●●●○

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

GATEWAY TREATMENTS



Gateway treatments alert drivers that they are entering a slower area. This treatment may include signage, entry portals, speed tables, raised crossings, and curb extensions.

BENEFITS

- Adds visual interest
- Design can contribute to the unique identity of a neighborhood or area
- Provides visual cues to slow drivers

DRAWBACKS

- Added expense and can require routine maintenance

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

SCORING CRITERIA

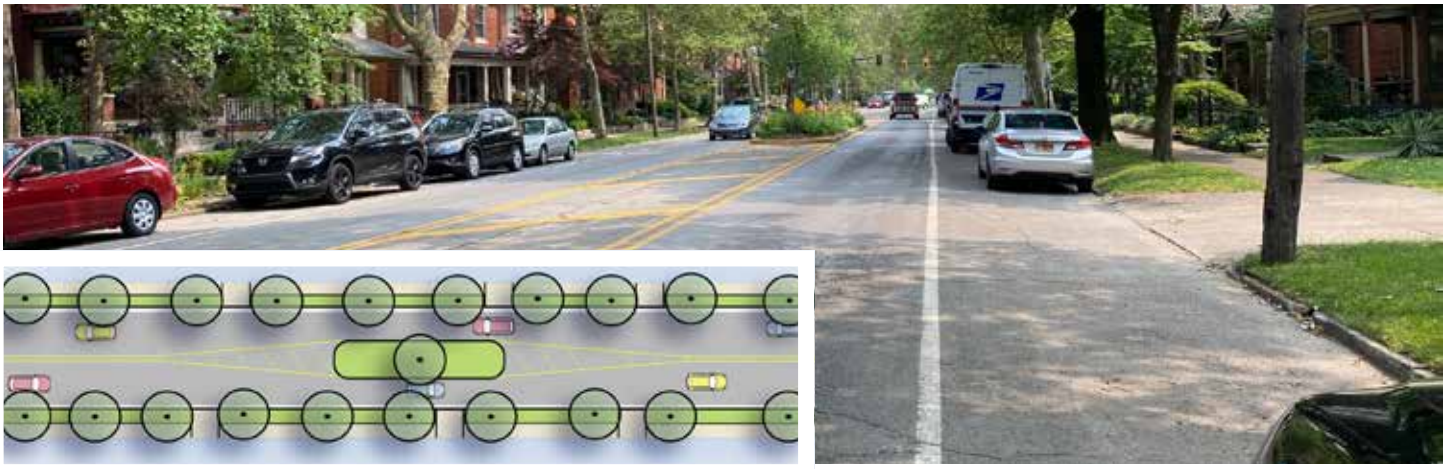
Ability to Implement	
Cost Effective	●●○○
Ease of Maintenance	●●○○
Flexible Design	●●○○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●●●○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●●●○

VISUAL LANE NARROWING



Visual lane narrowing utilizes visual elements, such as painted lines, trees or bollards to reduce the "optical width" of a narrowed street, thereby discouraging speeding.

BENEFITS

- Inexpensive
- Easy to install
- Visually narrows lanes to reduce speeds
- Can be used to delineate parking

DRAWBACKS

- Limited impact on rural corridors
- Limited impact on traffic volumes

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●●
Flexible Design	●●●○

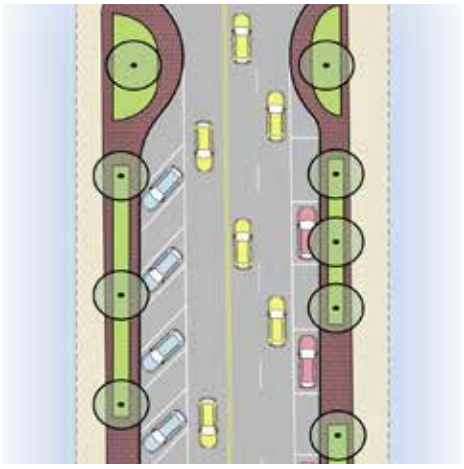
Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	●●●●
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●●●○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●○○○

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●●○○	$$$$

ON-STREET PARKING (PARALLEL & ANGLED)



On-street parking, both parallel and angled, helps to narrow roadways and calm traffic. Traffic is slowed by the proximity of parked vehicles as well as the necessity to watch for exiting vehicles and opening doors.

BENEFITS

- Creates a buffer between pedestrians and motorists, improving the walking environment.
- On-street parking in business districts is generally welcomed.
- Significant impact on traffic speeds during peak-hour use times

DRAWBACKS

- On-street parking impedes traffic flow on high-volume streets
- Angle parking creates more right-of-way impacts.
- Drivers have reduced visibility backing out of angled parking spots, posing a greater risk to bicyclists.
- If angled parking is selected, back in/head out parking can be utilized to provide better visibility when exiting a parking space, reducing the danger to motorists and bicyclists.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

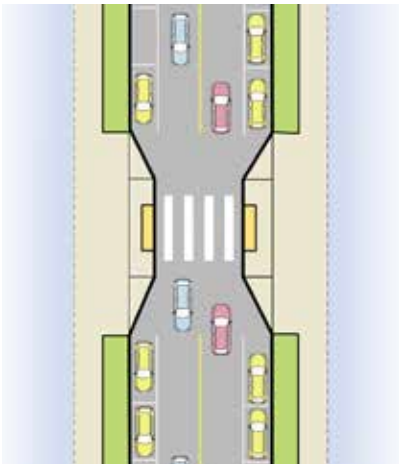
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●○
Flexible Design	●●○○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	●●●●
Auto Access	N/A
Emergency Vehicle Access	●●○○
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●○○
Aesthetic Improvements/Public Space	●○○○

PINCHPOINTS



Pinchpoints involve the narrowing of the roadway to provide a visual and physical element in a streetscape, typically mid-block location; to slow traffic down and give awareness of vehicular movement and provide additional safety for features such as crosswalks.

BENEFITS

- Shorten the crossing distance
- Provide opportunities for mid-block crossings
- Defines parking bays
- Can function as entry points, particularly when combined with gateway treatments
- Provide space for amenities and enhancements (e.g. kiosks, trees, lighting)

DRAWBACKS

- May force bicyclists and motor vehicles to share the travel lane
- May require some parking removal
- May require relocation of drainage features and utilities

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

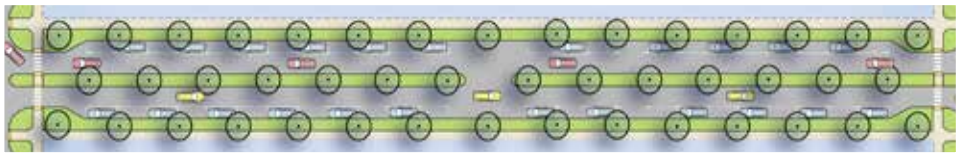
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●●
Flexible Design	●●●○

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●●●○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●○○○

MEDIANS AND REFUGE ISLANDS



Medians and refuge islands are elevated islands parallel to traffic lanes down the middle of the street, as on a boulevard. May also be used to limit left-turn movements.

BENEFITS

- Narrowed travel lanes reduce vehicle speed
- Provides visual cues to slow drivers
- Provide a safe refuge for pedestrians as they cross the street by shortening pedestrian crossing distances
- Provide ideal locations for trees, flowers, sculpture and other amenities

DRAWBACKS

- Limits left turn lanes into adjacent properties
- Bicyclists may have to share vehicular travel lanes near the island
- May require removal of some on-street parking
- May have utility impacts in the roadway

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●○
Flexible Design	●●○○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	
Auto Access	N/A
Emergency Vehicle Access	●●○○
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●○○
Aesthetic Improvements/Public Space	●○○○

WAYFINDING/SIGNAGE

Wayfinding/Signage involve

BENEFITS

- Helps individuals find their destinations quickly and easily, reducing confusion and frustration.
- Can contribute to the identity and visual appeal of a space, reinforcing brand identity in corporate or retail settings.
- A clear wayfinding system improves visitor satisfaction in public spaces.

DRAWBACKS

- Poorly designed or excessive signage can overwhelm users and make navigation more difficult.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●○
Flexible Design	●●●●

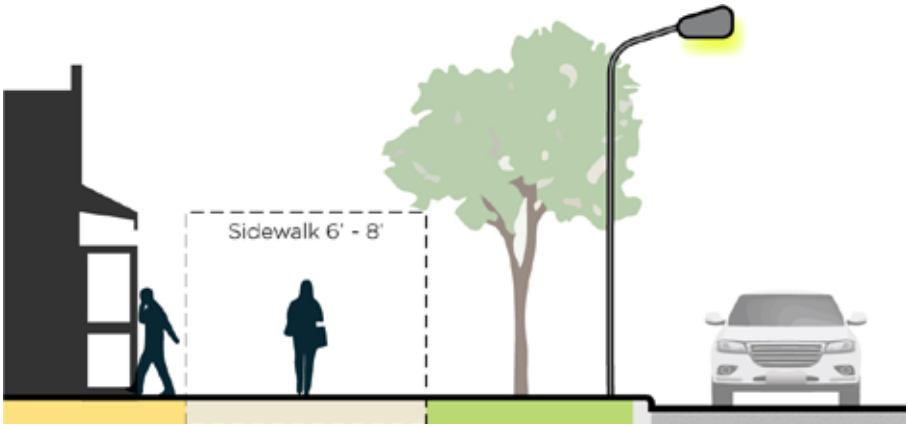
Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	●●●○
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●○○
Aesthetic Improvements/Public Space	●●●●

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●○○○	●○○○	$$$$

SIDEWALKS IMPROVEMENTS



In addition to safety aspects for pedestrians, **sidewalks** help indicate that drivers are in an area where slower speeds are expected.

BENEFITS

- Improves pedestrian mobility.
- Encourages street life.

DRAWBACKS

- In some conditions, a shared-use path may be more appropriate.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●●
Ease of Maintenance	●●●○
Flexible Design	●●●○

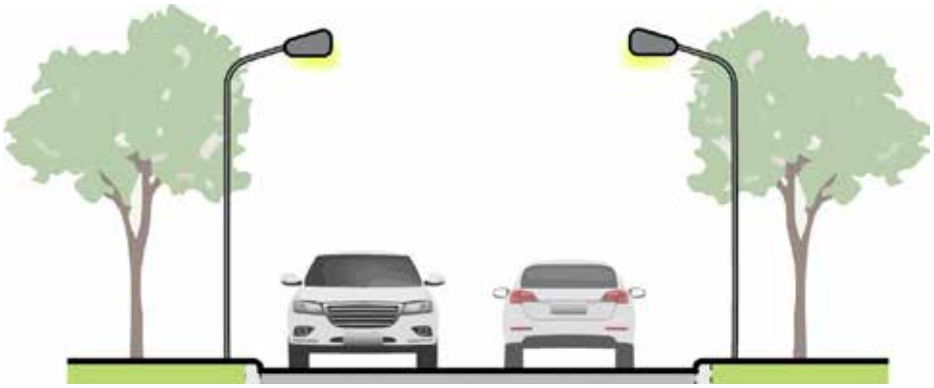
Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	N/A
Snowplow/Street Sweeping	N/A

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●●●○

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●●○○	$$$$

EDGE TREATMENT (CURBS)



Edge treatment refers to converting rural corridors to curbed roadways, which influences roadway character and speed.

BENEFITS

- Edge treatments define a corridor, increasing awareness. These treatments can also visually "narrow" a roadway.

DRAWBACKS

- Potential right-of-way impacts.
- Potential drainage impacts and costs to accommodate.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●○○
Ease of Maintenance	●●●○
Flexible Design	●●●○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●○○
Aesthetic Improvements/Public Space	●●○○

LANDSCAPING

Landscaping is used in conjunction with other traffic calming measures to define pedestrian and vehicle areas and provide horizontal separation between motor vehicles and pedestrians.

BENEFITS

- Increases motorists' awareness
- Can help define a neighborhood identity.
- Installation is long term and increases the quality of life of a community

DRAWBACKS

- Maintenance required for formalized plantings.
- Right-of-way impacts may be significant.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●●●●

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●●●●

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

STREET FURNITURE

Street furniture includes poles, signposts, newspaper racks, public art, benches, bicycle parking racks, and transit shelters. These elements provide a barrier between pedestrians and traffic and can also visually narrow the roadway for motorists, prompting them to slow down.

✓ BENEFITS

- Beautifies the pedestrian environment and fosters sidewalk activity.
- Can be tailored to reflect neighborhood character.

⊗ DRAWBACKS

- When done improperly, street furniture can obstruct pedestrians' paths and clutter the streetscape.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●●●●

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	N/A

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●●●●

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

STREET LIGHTING

Street Lighting includes

BENEFITS

- Enhances visibility for drivers, cyclists, and pedestrians, reducing the risk of accidents.
- Encourages businesses to stay open later and increases foot traffic in commercial areas.
- Makes walking and biking at night safer and more accessible.
- Allows for safer nighttime outdoor activities and community engagement.

DRAWBACKS

- Excessive or poorly directed lighting can contribute to glare, skyglow, and disruption of natural ecosystems.
- Poorly designed lighting can create glare, reducing visibility for drivers and pedestrians.
- Excessive brightness can be unnecessary, wasteful, and intrusive for nearby residents.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

SCORING CRITERIA

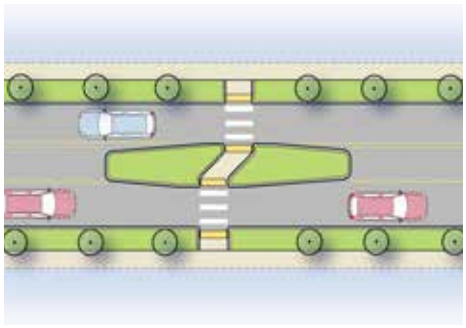
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●●●○

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●●●

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	●●●●
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●○○
Aesthetic Improvements/Public Space	●●●●

PEDESTRIAN REFUGE



A **pedestrian refuge** or island is a space in the middle of a street that provides protection for crossing pedestrians. It allows pedestrians to safely stop halfway through crossing and wait for a gap in traffic to continue.

BENEFITS

- Enhances pedestrian safety and reduces vehicle speeds.
- Can include landscaping and act as a gateway to a residential area.

DRAWBACKS

- May inhibit bicycle and handicap access if improperly designed.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●●
Ease of Maintenance	●●○○
Flexible Design	●●●○

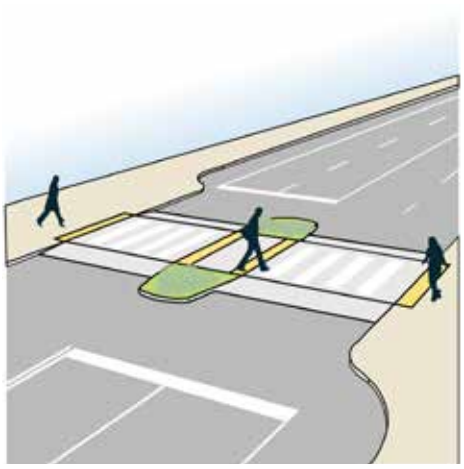
Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	●●●●
Auto Access	●●●○
Emergency Vehicle Access	●●○○
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●●●●

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

RAISED CROSSWALK



Raised crosswalks are elongated speed humps that feature a flat top at the same elevation as the adjacent sidewalks. They can be found at intersections or midblock.

BENEFITS

- Speed reduction
- Increase visibility of and for pedestrians

DRAWBACKS

- Maintence
- Signage

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●○○○

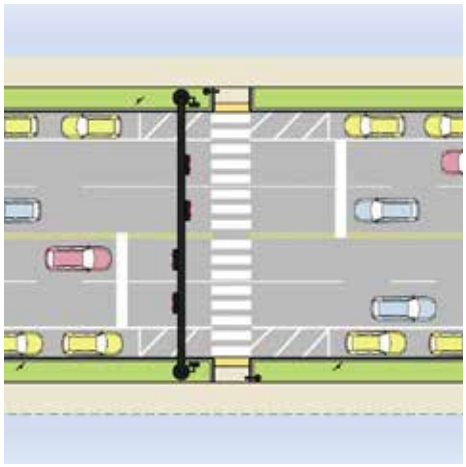
Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	N/A
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●○○○

Environmental Factors	
Noise Pollution	●●○○
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●○○○

PEDESTRIAN-FOCUSED

HIGH-VISIBILITY CROSSWALKS



High-visibility crosswalks are crossings that are equipped with flashing beacons, in-pavement lighting, and conspicuous signage. They encourage pedestrians to cross at a designated location and make them more visible to oncoming motorists.

✓ BENEFITS

- Increases driver yielding behavior.

⊗ DRAWBACKS

- Less effective at high-speed, multi-lane crossings
- Most effective if paired with other traffic calming methods

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

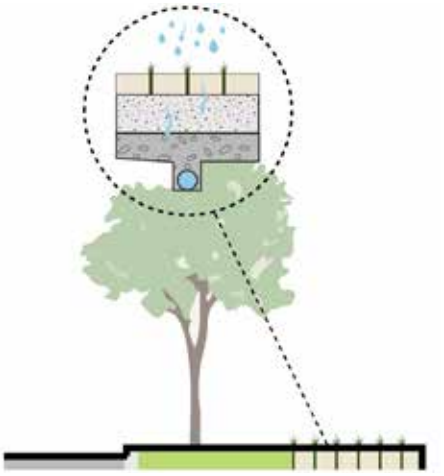
Ability to Implement	
Cost Effective	●●●●
Ease of Maintenance	●●●○
Flexible Design	●●●○

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	●●●○
Auto Access	N/A
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●●●○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●●●○

PERMEABLE PAVERS



Permeable Pavers is made of a porous material that allows stormwater to flow through it and soak inti the soil below. This reduces runoff and helps filter out pollutants that contribute to water pollution.

BENEFITS

- Reduces stormwater run-off
- Less standing water that can cause slipping or damage like water freezes that creates cracks
- In freezing temperatures, the pavers will remain warm and provide a safe surface for driving or walking
- In hot temperatures, the pavers stay cool due to water circulation and the lighter color

DRAWBACKS

- Not ideal for heavily trafficked areas. Restricted for use of driveways, walkways, and patios.
- Requires periodic maintenance to prevent clogs

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●●	●●●○	$$$$

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●●●●

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●●●●

BIOSWALES

Bioswales are channels designed to collect and filter stormwater runoff. They can be integrated into medians, curb extensions, public spaces, etc.

BENEFITS

- Minimizes overflow, improves quality of surface water, and helps recharge groundwater
- Increase the biodiversity of vegetation and insect species
- More cost effective in the long run

DRAWBACKS

- Increases maintenance and required landscaping
- Cannot be used in areas with steep slopes
- If water is left stagnant, it can be a potential source of odor and mosquitoes

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●○○
Flexible Design	●●●●

Active Transportation	
Pedestrian-Friendly	●●●●
Cyclist-Friendly	N/A

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●●●●

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SHARROWS

A **sharrow** is a pavement marking consisting of two arrows and a bicycle symbol and indicate areas for cyclists to share the roadway with vehicular traffic.

BENEFITS

- Low cost.
- Shows motorists where to expect cyclists

DRAWBACKS

- Can be ineffective when not connected to other bicycle infrastructure

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●○○
Ease of Maintenance	●●●●
Flexible Design	●●●●

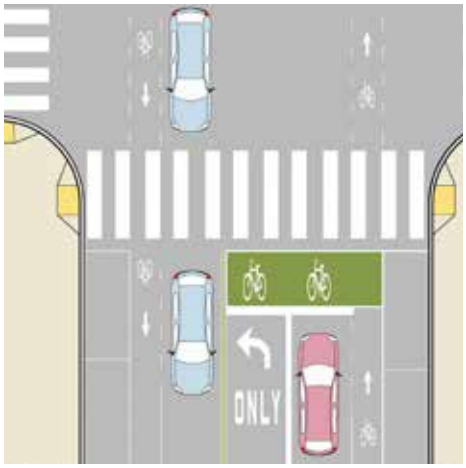
Active Transportation	
Pedestrian-Friendly	N/A
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●○○○

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$$

BIKE BOX



A **bike box** consists of a painted bike lane that ends in a box at the intersection. These are used to provide priority for bicyclists at intersections and increase their visibility on the roadway.

BENEFITS

- Gives priority to cyclists.

DRAWBACKS

- Without proper education and awareness, cyclists and motorists may misuse or ignore this rare traffic calming element.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

SCORING CRITERIA

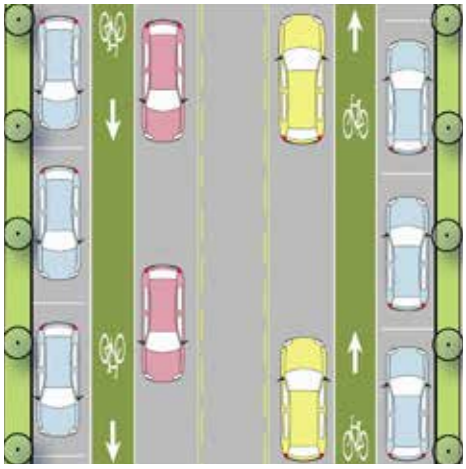
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●●
Flexible Design	●●●○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●●●

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●○○○

BICYCLE LANE



A **bicycle lane** is a dedicated lane for bicycle travel that is usually four to six feet or more. Bike lanes may be adjacent to travel lanes or be buffered in some manner.

BENEFITS

- Creates a more predictable traffic environment.
- Increases driver awareness of cyclists on the road.
- Encourages cyclists to ride in the street instead of on the sidewalk.

DRAWBACKS

- Most effective when connected to other bicycle infrastructure.
- Can create conflict between cyclists and transit vehicles.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

SCORING CRITERIA

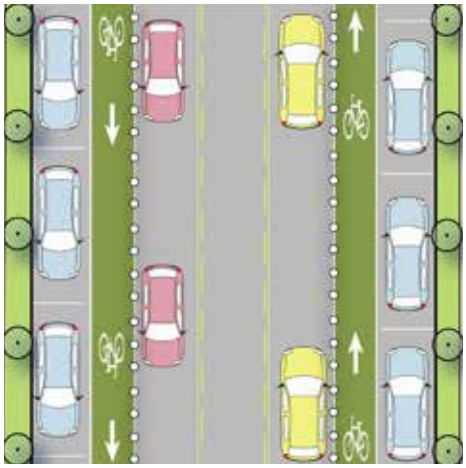
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●●
Flexible Design	●●●○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	●●○○
Auto Access	●●●○
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●●●

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●○○○

BUFFERED BICYCLE LANE



A **buffered bicycle lane** provides a physical barrier between moving or parked vehicles and bicycle traffic. Striping, curbs, parking lanes, and bollards can all act as a buffer for bike lanes.

BENEFITS

- Allows less experienced cyclists to feel comfortable on the roadway.

DRAWBACKS

- May be unfeasible if there is insufficient right-of-way.

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●○
Flexible Design	●●●○

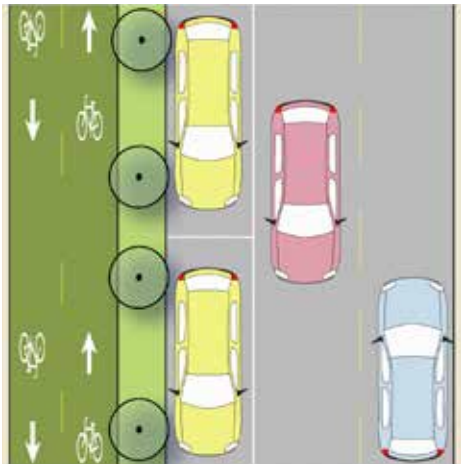
Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●●●

Traffic and Parking Considerations	
Parking	●●○○
Auto Access	●●●○
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●○○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●○○○

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

CYCLE TRACK



A **cycle track** is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk.

✓ BENEFITS

- Safest for cyclists, since separated from roadway
- Eliminate conflicts points between cyclists and drivers
- Creates high-volume bicycling corridor
- Can link to multi-use track system

⊗ DRAWBACKS

- More costly than on-street bike facilities
- Intentional design at intersection to allow visibility for cyclists

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●○
Flexible Design	●●●○

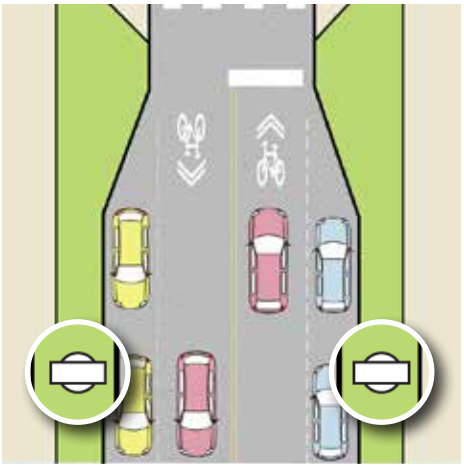
Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●●●

Traffic and Parking Considerations	
Parking	●●○○
Auto Access	●●●○
Emergency Vehicle Access	●●●●
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●●●○

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●○○○	●○○○	$$$$

STATIONARY RADAR SIGNS/SPEED DISPLAY BOARD



Radar signs are interactive signs that draw motorists' attention to their speed and the road's legal speed limit.

BENEFITS

- Proven to slow down traffic, even years after being installed.
- Particularly effective on high volume highways.

DRAWBACKS

- Do not slow traffic as much as physical measures.
- Motorists' compliance is voluntary.
- Enforcement is still needed.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$

SCORING CRITERIA

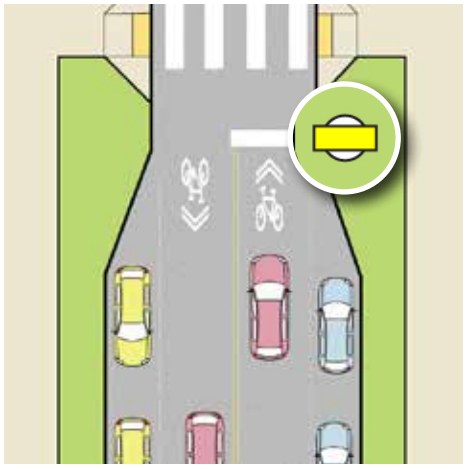
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●○
Flexible Design	●●○○

Active Transportation	
Pedestrian-Friendly	N/A
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	N/A
Snowplow/Street Sweeping	N/A

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●○○○

ADVANCE YIELD SIGNS



Advance yield signs are usually placed 20 to 50 feet from an unsignalized mid-block crossing. They encourage motorists to slow down in advance and be alert for pedestrians in the roadway.

BENEFITS

- Have been shown to dramatically reduce conflicts between drivers and pedestrians.

DRAWBACKS

- Yielding cars can be dangerous at multi-lane crossings because they obstruct pedestrians' view of adjacent lanes.
- Motorists may ignore sign if it is placed too far from crossing.

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●○○	●○○○	$$$$$

SCORING CRITERIA

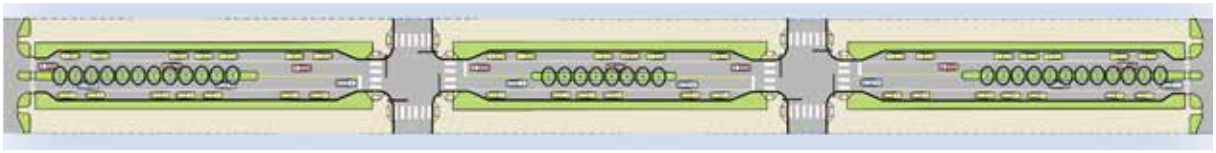
Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●●
Flexible Design	●●●●

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●●○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	N/A
Snowplow/Street Sweeping	●●○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●●
Aesthetic Improvements/Public Space	●○○○

SIGNAL TIMING AND PHASING



Coordinated **signal timing** synchronizes traffic movements and manages the progression speed of specific modes and flow as desired along a corridor.

BENEFITS

- Can reduce motorists' incentive to speed
- Most effective along arterials and when intersections operate below capacity
- Provides progression and eliminates stops over multiple signals
- Resulting in near-zero delay for through vehicles regardless of intersection cycle length

DRAWBACKS

- If there are too many intersections with different spacing and traffic volumes, it can result in negative traffic effects
- Can result in longer delays for turning traffic, cross-street traffic, pedestrians, bicycles, and transit

OVERALL IMPACTS		
Reduces Traffic Speed	Reduces Traffic Volume	Cost
●●●○	●●○○	$$$$

SCORING CRITERIA

Ability to Implement	
Cost Effective	●●●○
Ease of Maintenance	●●●●
Flexible Design	●●○○

Active Transportation	
Pedestrian-Friendly	●●●○
Cyclist-Friendly	●●○○

Traffic and Parking Considerations	
Parking	N/A
Auto Access	N/A
Emergency Vehicle Access	●●●○
Snowplow/Street Sweeping	●○○○

Environmental Factors	
Noise Pollution	N/A
Utility/Right-Of-Way Impacts	●●●○
Aesthetic Improvements/Public Space	●○○○

03

SITE EVALUATION

SITE EVALUATION

This sections outlines the basic elements of the traffic calming site review and intervention process. This is not meant to represent every step that might occur in the overall evaluation of traffic calming opportunities by city leadership and staff. Instead, the following steps focus on the technical framework that should be used to effectively apply this Streetscape Guidebook to future challenges that arise. It is also assumed that the sophisticated public outreach and interface approaches typically used by the seasoned city staff will continue to facilitate smooth implementation of the concepts of this Guidebook.

APPLYING THE EVALUATION CRITERIA

1

Identify "hot spots" *for potential traffic calming. These are areas that have been observed to have any of the following:*

- *Significantly increased/ unsafe vehicle speeds*
- *Significantly increased vehicle volumes*
- *Pedestrian and/or bicyclist safety issues*
- *Increased accidents or "near misses"*
- *Consistent perception of decreased safety*
- *Special circumstances, such as proximity to schools, parks or other public uses*

2

City completes the technical analysis *of conditions:*

- *Conduct site visit and observation*
- *Evaluate 50% or 85% speed*
- *Evaluate Average Daily Traffic volume*
- *Evaluate accident data*
- *Compare to previous data*
- *Outline special circumstances*

3

Identify road type *with the existing roadway conditions:*

- *Determine potential "recipe" of interventions for implementation at designated locations that meet criteria for traffic calming.*

NOTE: 50th/85th Percentile Speed - *The speed at or below which 50% or 85% of all vehicles are observed to travel under free flowing conditions past a nominated point. It is a value that is used by many states and cities for establishing regulatory speed zones. The 50th percentile speed can be used in lieu of the 85th percentile speed if there is a high presence of vulnerable road users and urban features are present.*

NOTE: Average Daily Traffic (ADT) - *The ADT reflects the average number of vehicles that travel through a segment of roadway over a 24 hour period. The ADT is sometimes called the average annual daily traffic (AADT) to show that the data has been factored to an annual average (using seasonal factors developed from automatic traffic recorders (ATRs) that collect data continuously throughout the year). The ADT is the most basic unit of traffic monitoring and is essential for developing traffic forecasts.*

TECHNICAL CRITERIA	
Speed	• *The 50th or 85th percentile speed exceeds posted speed limit by more than 6 mph*
Volume	• *Peak hour volume increases from previous data is greater than 30%*
Accidents	• *Accident data shows a high incident of accidents that appear to be related to excessive speeds*
Adjacency Impacts	• *Likely to divert high traffic volumes to adjacent streets? "moving the problem"*
Special Circumstances	• *Is this a primary emergency route?* • *Special use present?* *e.g. school, pedestrian-oriented / "downtown" commercial district*

CITY OF CUYAHOGA FALLS

STREETSCAPE

GUIDEBOOK