Council Presentation

ENGINEERING STANDARDS

Transportation Updates

Standards - Purpose & Need

1. Safety
2. Accessibility
3. Traffic Operations
4. Maintenance
5. Liability

Highlights

1. Roadway Cross-Sections (updated)
2. Traffic Calming (NEW)
3. Maintenance & Operations (NEW)
4. ADA Updates (updated)
5. Roundabout First & Urban Design (NEW)

Roadway Cross-Sections

Value #2: Connectivity

The transportation networks for all modes of travel are well connected, direct, and promote multimodal options.

TMP / Standards Alignment

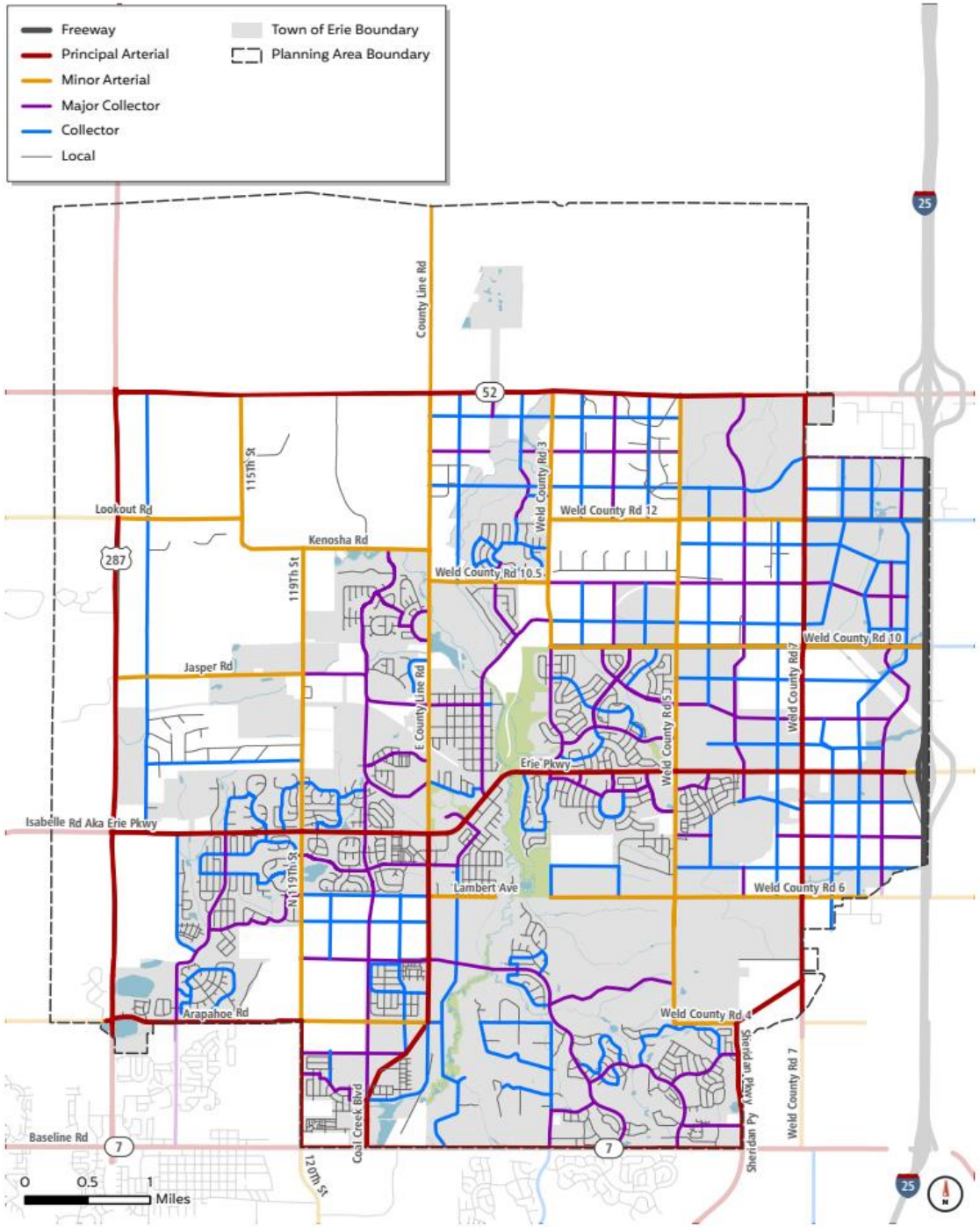
Arterials
Principle 4-Lane Arterial
Minor 2-Lane Arterial

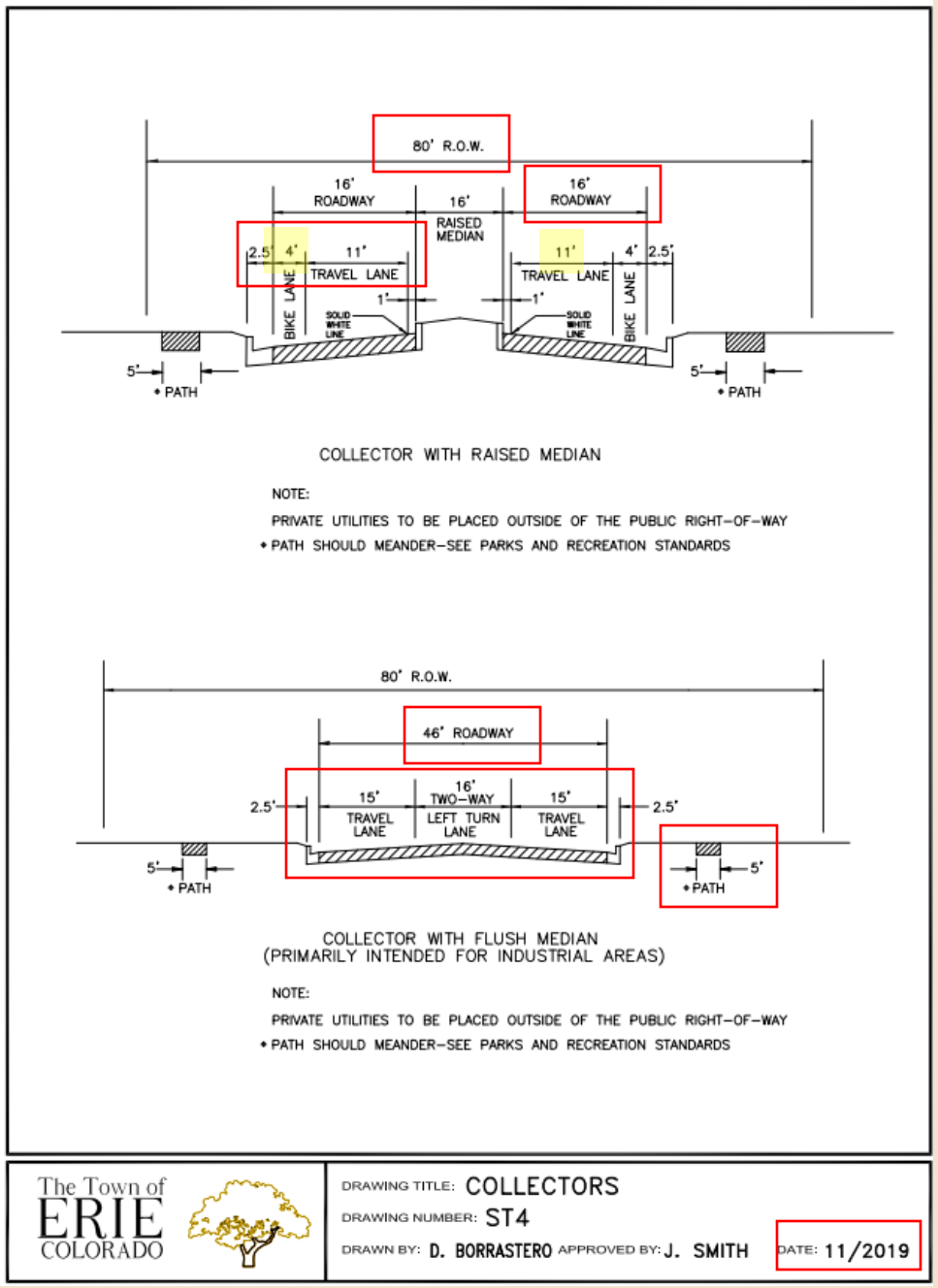
Collectors
Major Collector
Collector

Local
Local residential
Local industrial

Rural

Alley
Typical
Green Alley





EXISTING COLLECTOR STREET EXAMPLE:

Cross-Sections in Engineering Standards communicate key features:

1. Right-of-Way Width
2. Traffic Volume
3. Number of Travel Lanes
4. Operating Speeds
5. Roadside Elements

NEW COLLECTOR STREET EXAMPLE:

Cross-Sections in Engineering Standards communicate key features:

1. Right-of-Way Width
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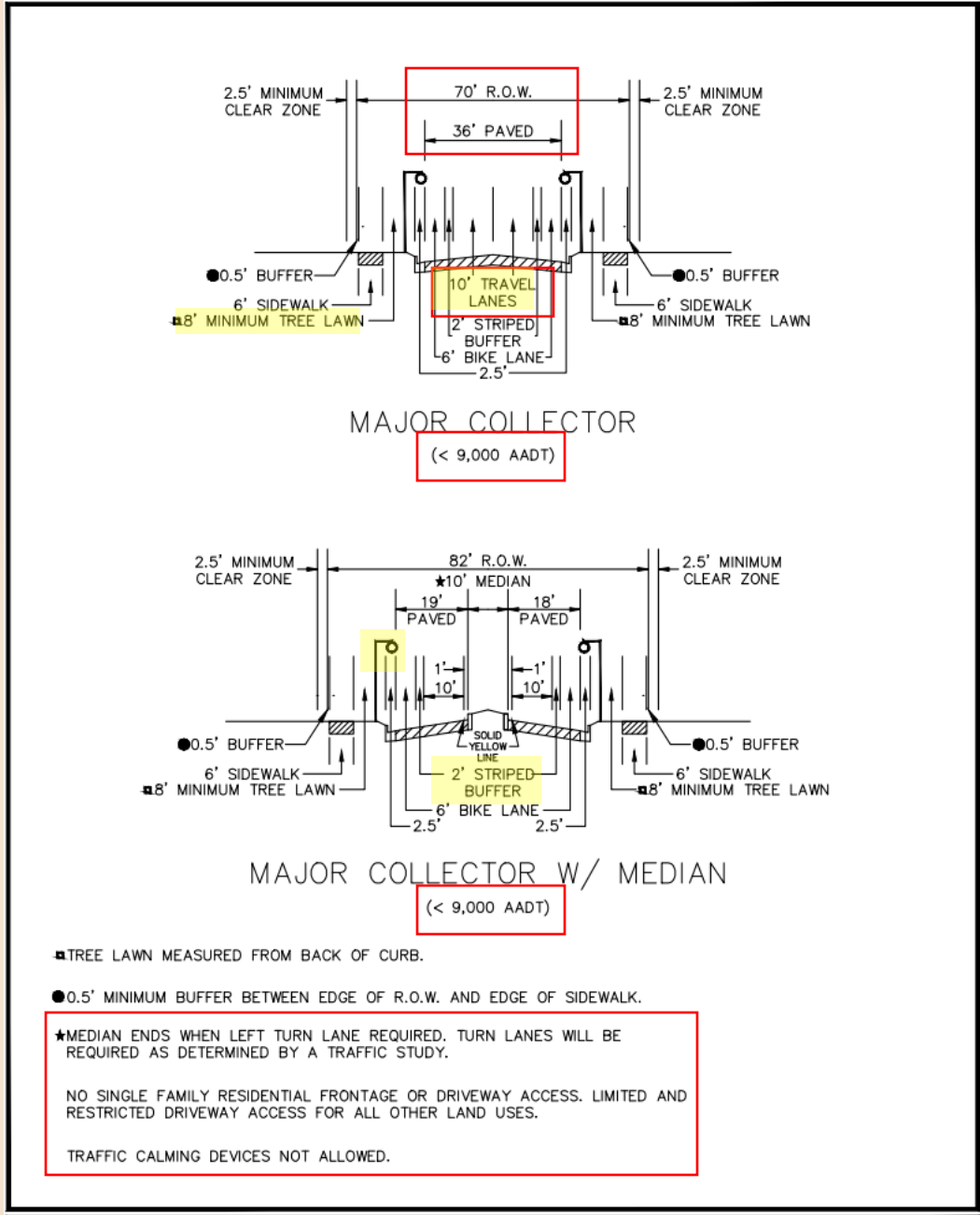
5. Roadside Elements

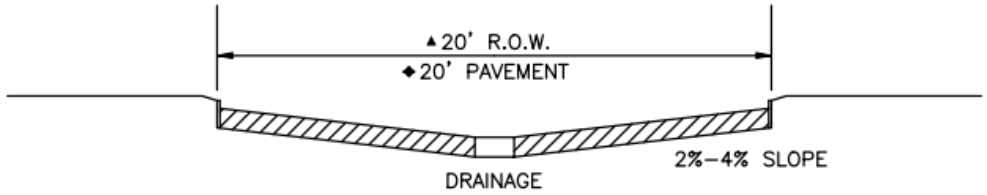


NEW GREEN ALLEY:

1. Right-of-Way Width
2. Drainage (Slope)
3. Pavement Material
4. Emergency Response
5. Green Infra.

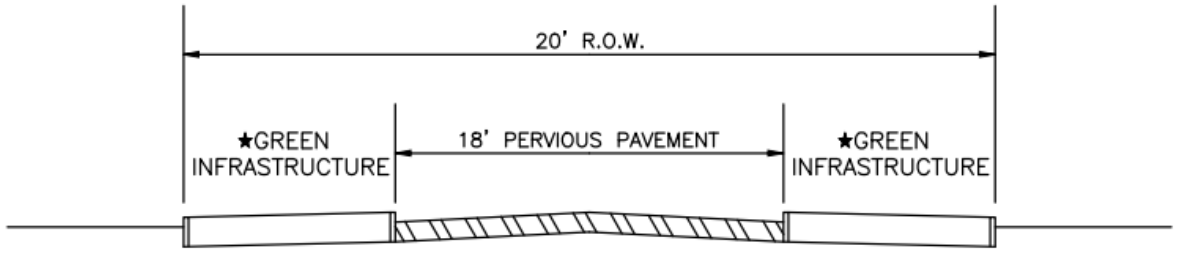
521.01.01 Green Alleys

Use green alleys in place of typical alleys to create an inviting public space for people to walk, play, and interact. Green Alleys should be constructed with low impact pavement materials, such as pervious pavements with high reflectivity to reduce heat island effects. Alleys may be operated as pedestrian-only environments or as shared streets. Bollards, signs, and design features should be utilized to make clear the intended alley users, but should not impact the minimum width of 18' at locations where access to garages and parking spaces is needed. Where operated as shared streets, design features should indicate the desired path of travel for motorists, as well as any designated parking areas. Stormwater run-off should be infiltrated as much as possible in-place using permeable paving or rain gardens at the edge of the pedestrian path. Green Alleys should utilize pedestrian-scale light fixtures that focus their illumination toward the ground and minimize light pollution. Enhanced intersection crossing treatments should be considered where bicyclists may have limited visibility. Consider the application of snowplow compatible materials and provisions for maintenance equipment access. Detail ST20 provides a sample green alley cross-section. (should include language such as: All alley and green alley cross-sections must be approved to by the Town Engineer.)



TYPICAL ALLEY

(< 500 AADT)



GREEN ALLEY

(< 500 AADT)

◆20' PAVEMENT WIDTH REQUIRED WHERE EMERGENCY ACCESS IS NEEDED. 18' PAVEMENT WIDTH MAY BE CONSIDERED WHERE NO EMERGENCY ACCESS IS NEEDED.

▲REQUIRED R.O.W. WIDTH MAY CHANGE BASED ON UTILITY EASEMENT REQUIREMENTS.

★GREEN INFRASTRUCTURE TREATMENTS MUST BE FULLY ENGINEERED AND APPROVED BY TOWN ENGINEER.

Traffic Calming

Value #4: Safety and Comfort

Erie's transportation system is designed and maintained with safety and comfort as the leading factor for transportation improvements.

TMP Policy Alignment

Traffic calming and speed mitigation are key to providing a safe and efficient multimodal transportation network.

This section highlights several traffic calming and speed mitigation tools and techniques that can be applied to mitigate a variety of traffic safety concerns. Traffic calming treatments also offer an opportunity to implement green infrastructure. Traffic calming and speed mitigation strategies should be applied equitably throughout the town and at locations with significant vehicle speeding.

See Policy TMP.6.1

These tools are divided into two categories:

Physical Speed Control Devices

- *Vertical Devices*
- *Horizontal Devices*
- *Narrowing Devices*

Non-Physical Devices

As identified in **Chapter 9 (Programs)**, the Town should conduct a Speed Limit Study that evaluates the potential for reducing speeds townwide or on key corridors.

See Policy TMP.4.6

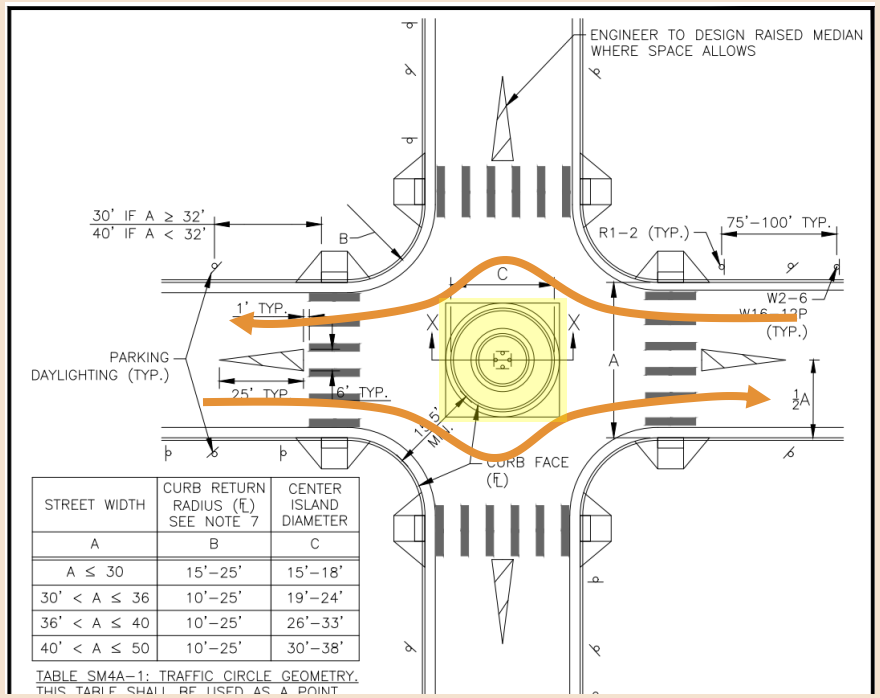
Engineering Standards

- Intersection Curb Extensions
- Midblock Curb Extensions
- Median Ped Refuge
- Traffic Circle
- Speed Cushion

Additional traffic calming tools beyond these five may be considered and must be approved by the Town Engineer. Refer to ITE's Traffic Calming Measures, and FHWA's Traffic Calming ePrimer, and the US Traffic Calming Manual for additional traffic calming tools and guidance on design and considerations of each tool, including the five listed above. A list of the efficacy of various traffic calming tools to be considered when selecting a device is provided in The Town of Erie Neighborhood Speed Management Program.

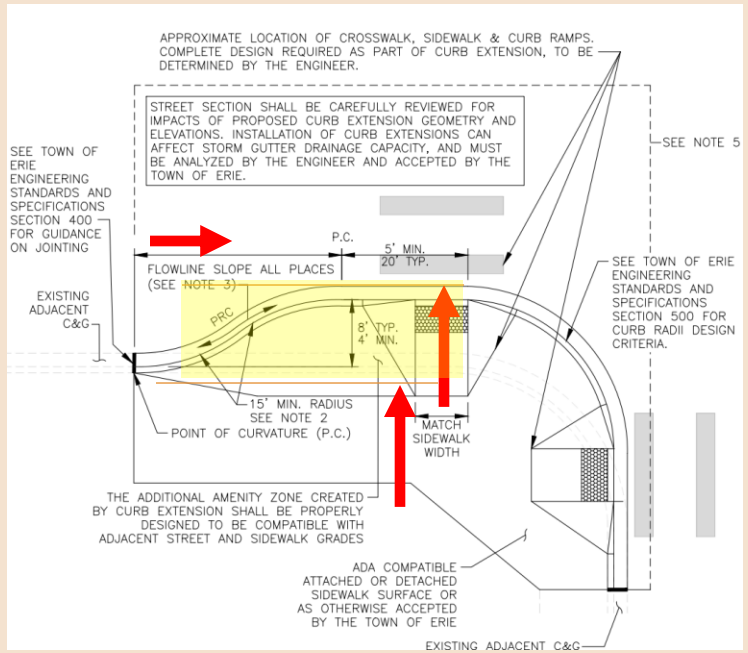
Consideration of contextual variables. When selecting and designing a traffic calming device, consideration should also be given to contextual variables, including if the street is on a snowplow route, bikeway, or bus route, as well as fire truck/emergency response and the grade of the roadway.

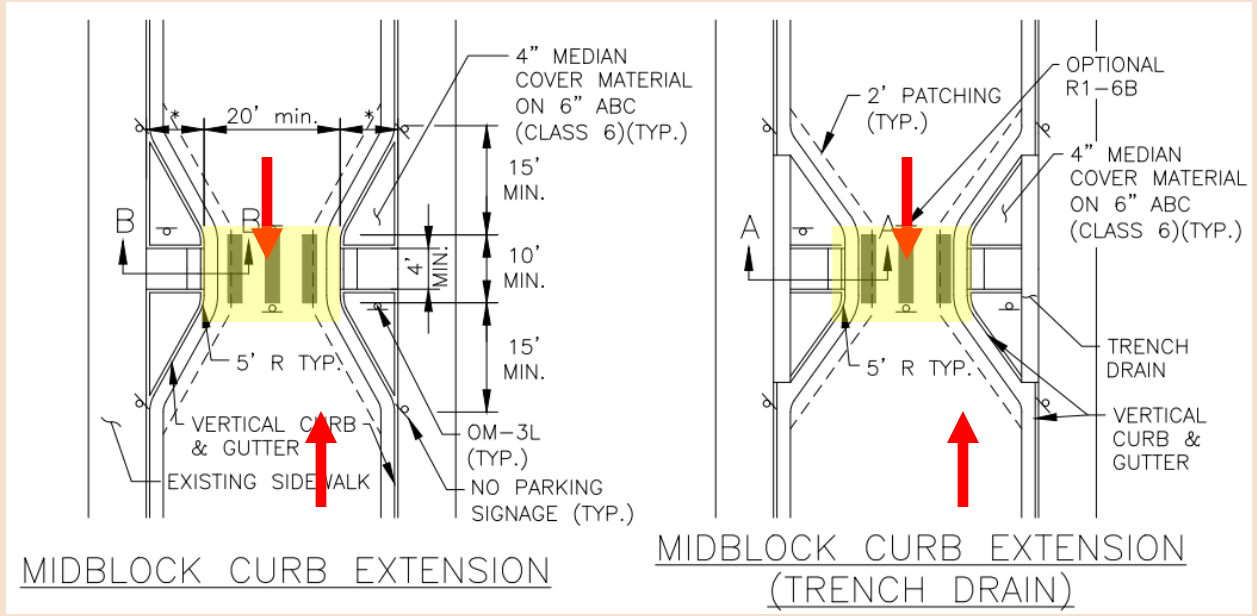
Design parameters for the device itself. Standard details for the five devices approved by the Town are included in these STANDARDS AND SPECIFICATIONS. Additional guidance on appropriate spacing of devices, including formulas for spacing of speed cushions, can be found in the U.S. Traffic Calming Manual.

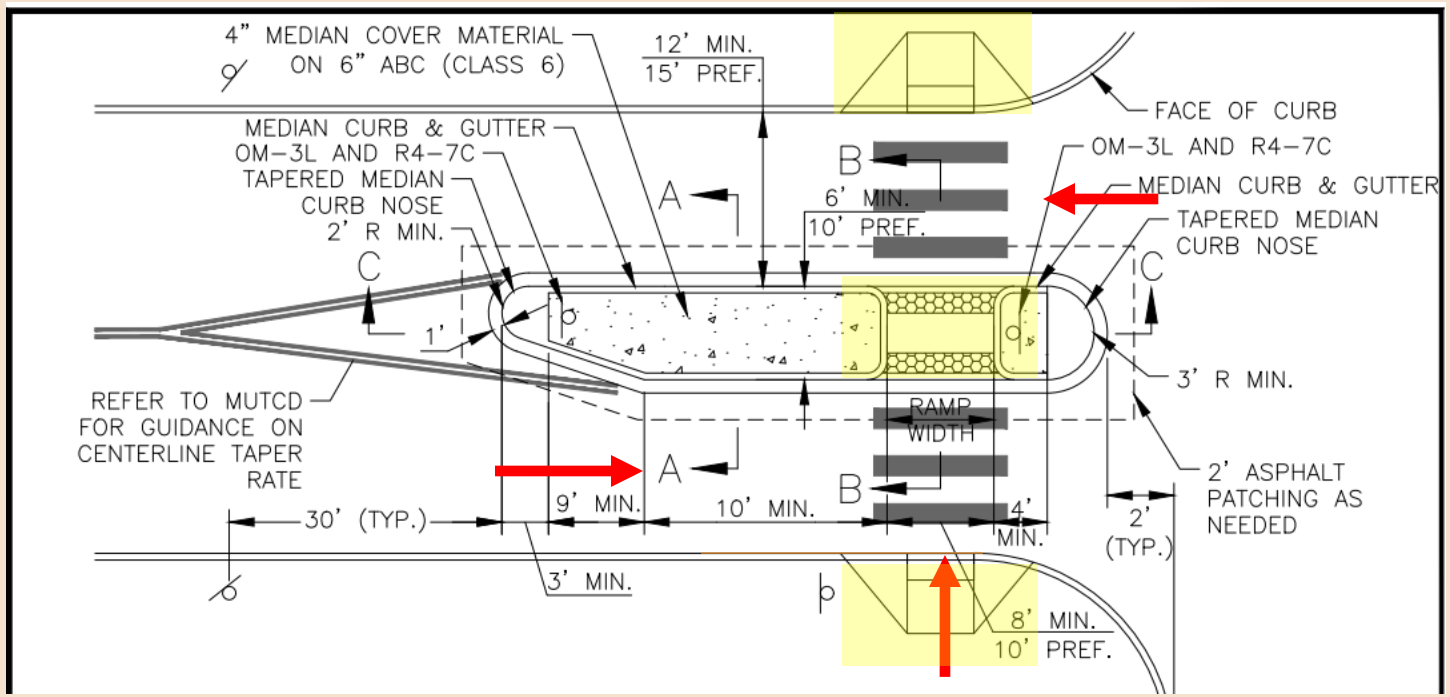


STREET WIDTH	CURB RETURN RADIUS (℄) SEE NOTE 7	CENTER ISLAND DIAMETER
A	B	C
A ≤ 30	15'–25'	15'–18'
30' < A ≤ 36	10'–25'	19'–24'
36' < A ≤ 40	10'–25'	26'–33'
40' < A ≤ 50	10'–25'	30'–38'

TABLE SM4A–1: TRAFFIC CIRCLE GEOMETRY.
THIS TABLE SHALL BE USED AS A POINT







Operations & Maintenance

Value #1: Multimodal Options

Erie provides a comprehensive set of transportation options (walking, biking, mobility devices, transit, and driving) that are convenient, reliable, connected, intuitive, and accessible for all who need them. The network that supports these modes is continuously improving based on data and the needs of the community.

TMP/Engineering Standards Alignment

Maintenance

New and increased roadway, bicycle, and pedestrian infrastructure demands increase investment and improvements to maintenance.

In the summer, debris in the way of bicycle and pedestrian facilities can make them hazardous and unusable. Similarly, in the winter, snow and ice must be efficiently cleared to best align with Erie's multimodal goals and make walking/rolling and biking a reliable transportation option.

See Policy TMP.6.4

To support this new infrastructure, the Town should consider the following action items:

- Consider a bike facilities and trails sweeping/plowing priority schedule that prioritizes resources for trails and roadways with bicycle facilities.
- Consider new sweeping/plowing equipment for bike facilities to be able to accommodate protected bike lanes.
- Develop a maintenance plan for ROW amenities.
- Consider new full-time employees to maintain new infrastructure.
- Develop a maintenance plan for new facilities including operation and maintenance of bus stop amenities, medians, and other infrastructure in the right-of-way.
- Hire additional staff in order to sustain the maintenance levels of service required by the growth in the transportation network.

✱ **As the Town considers these actions, it is important to note potential tradeoffs and consequences of these actions. For example, the Town must understand the implications of plowing bike facilities before major vehicle streets. The prioritization of snowplow routes as well as other actions should reflect the Town's priorities.**

Maintenance and Operations

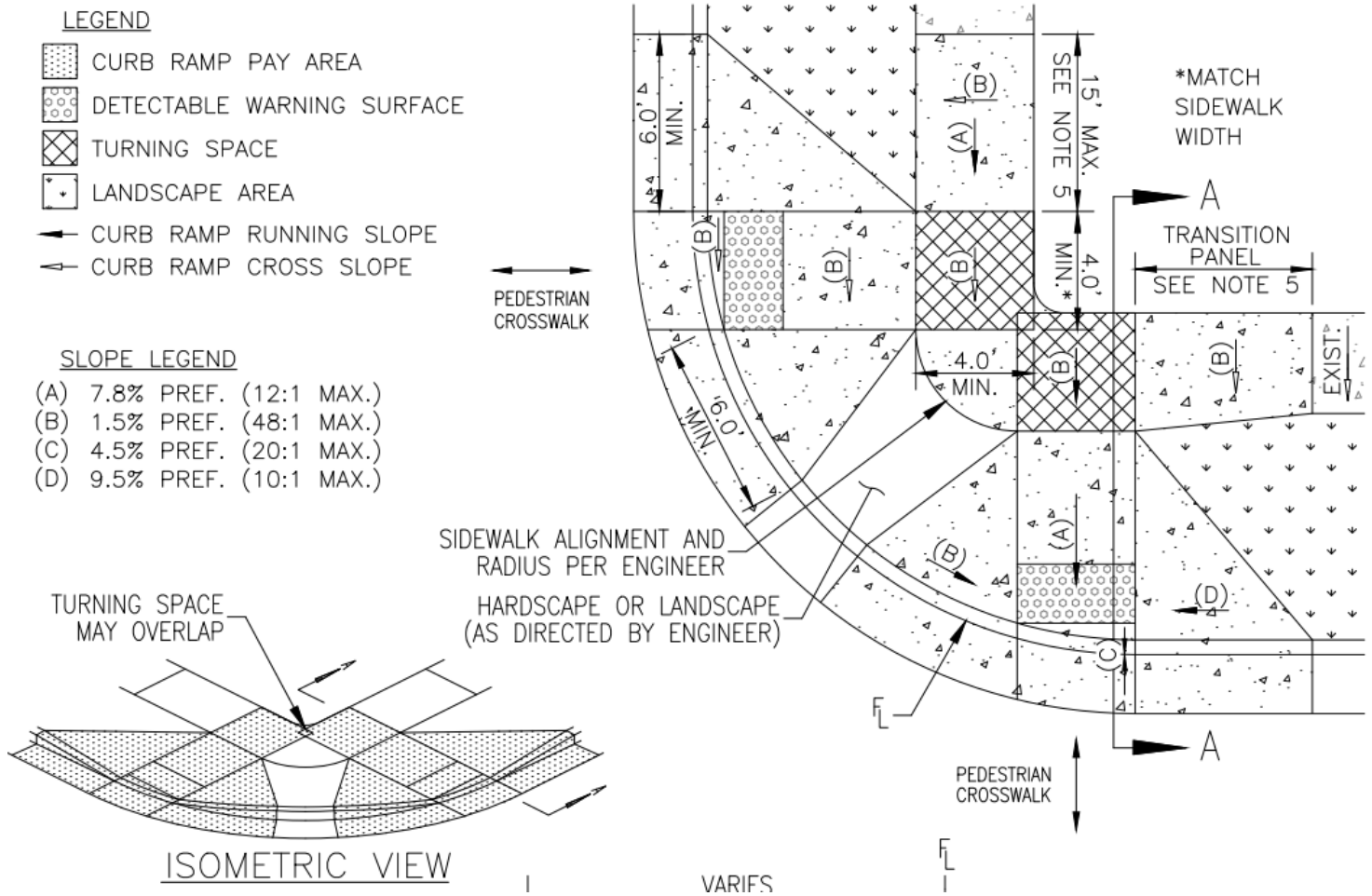
- Inlaid Pavement Markings
- Traffic Signal Equip. & Install
- Materials / Delineators for Plows

Americans with disabilities (ADA) Act

Value #3: Equity

The transportation system is designed for all users, is accessible, provides a sense of independence, and increases livability.

Public Right-Of-Way Accessibility Guidelines (PROWAG) / ADA Standards



Roundabout First / Urban Design

Value #5: Innovation

Erie incorporates emerging technologies, such as connected infrastructure, autonomous vehicles, electric vehicles, and other electric devices, into its policies and design standards with a consideration towards efficiency, equity, safety, public health, and environmental concerns.

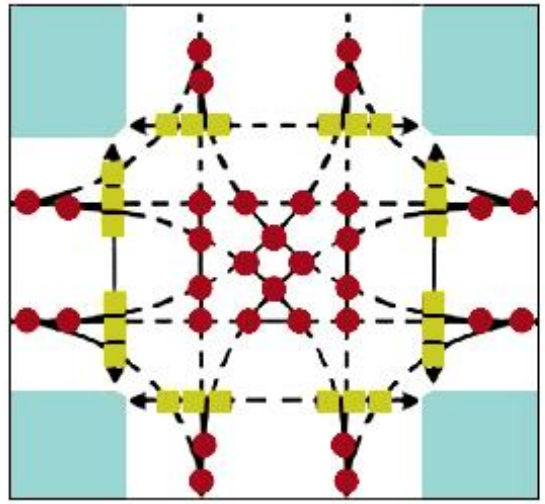
Value #6: Mitigation, Adaptation, and Resiliency

Erie's transportation system is resilient and adaptable; improvements in the transportation system over time (such as improvements in multimodal transportation options, green infrastructure, connectivity, and technology) reduce carbon emissions and vehicle miles traveled while promoting health and sustainability.

Roundabout First Approach

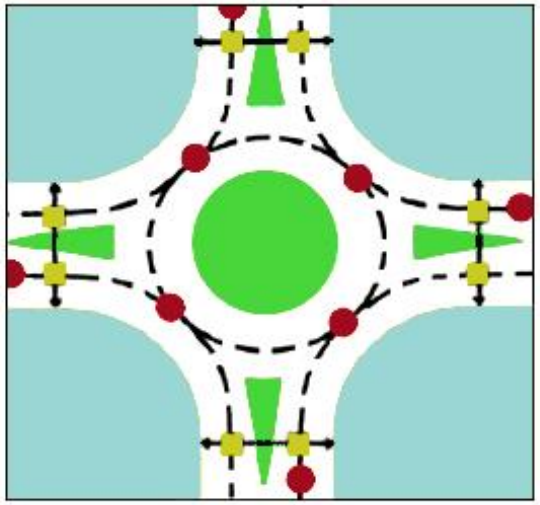
521.03.10 Roundabout Design

Unless found to be infeasible given the context (such as right-of-way or sight distance constraints) single lane roundabouts should be the default traffic control at all intersections of two-lane streets where a traffic signal or multi-way STOP would otherwise be warranted in order to manage speeds and mitigate the occurrence of severe traffic crashes. The geometric elements of the roundabout provide guidance to drivers approaching, entering, and traveling through a roundabout.



32 Vehicle conflicts

24 Pedestrian conflicts



8 Vehicle conflicts

8 Pedestrian conflicts

Urban Design Guidance

Bikeways

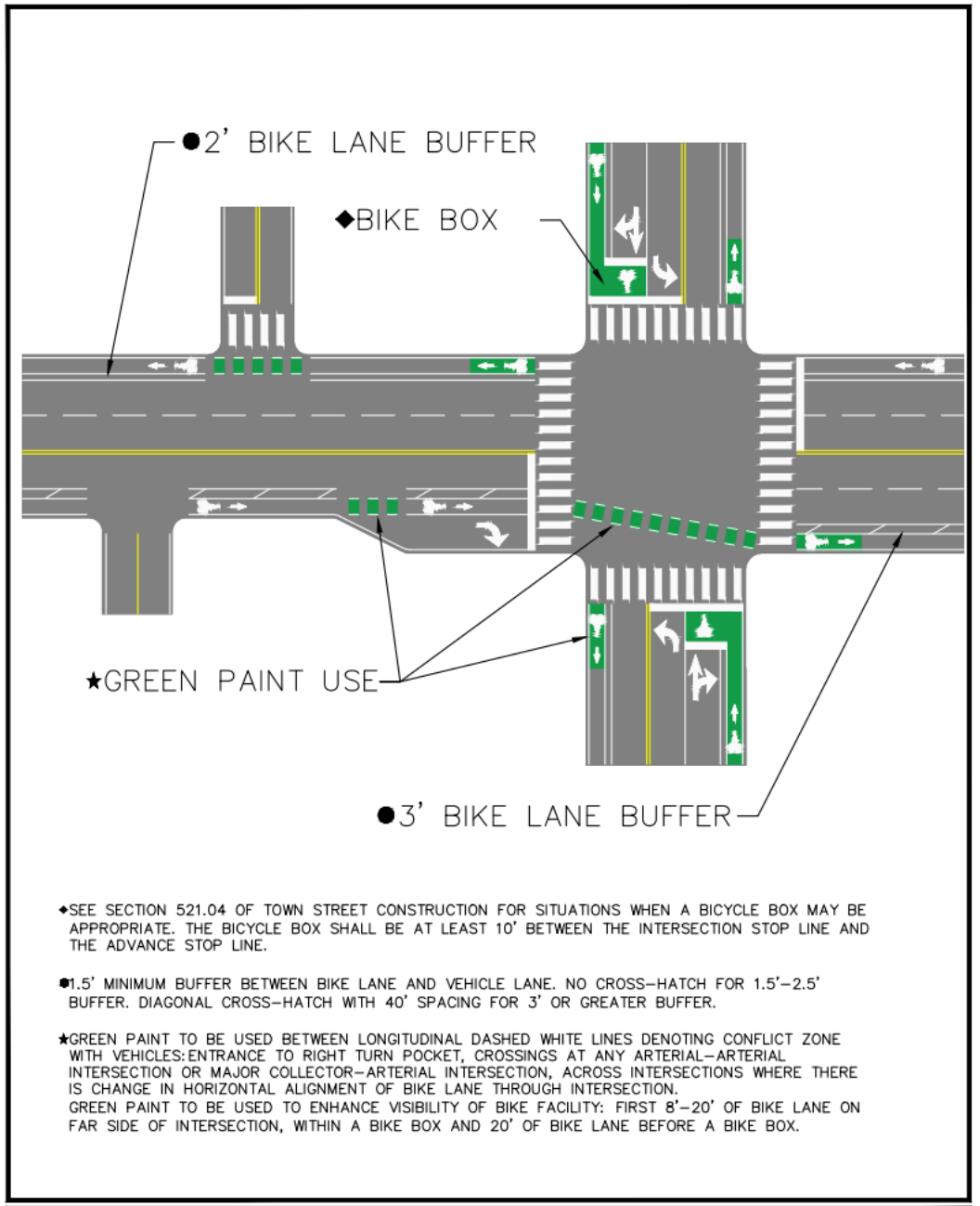
- Buffer Protections from Motor Vehicles
- Green Pavement Markings to Communicate Shared Spaces
- Visibility at Intersections

Pedestrian Walkways

- Crosswalks for Visibility at Intersections
- Stop Bars to Separate Space

Transit/Emergency Response

- Traffic Signal Detection, Priority
- Intersection Bus Stop Coordination w/Bike-Ped Infra.
- Streetlights



Thank You

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