

COMPLETE STREETS IN RURAL COMMUNITIES

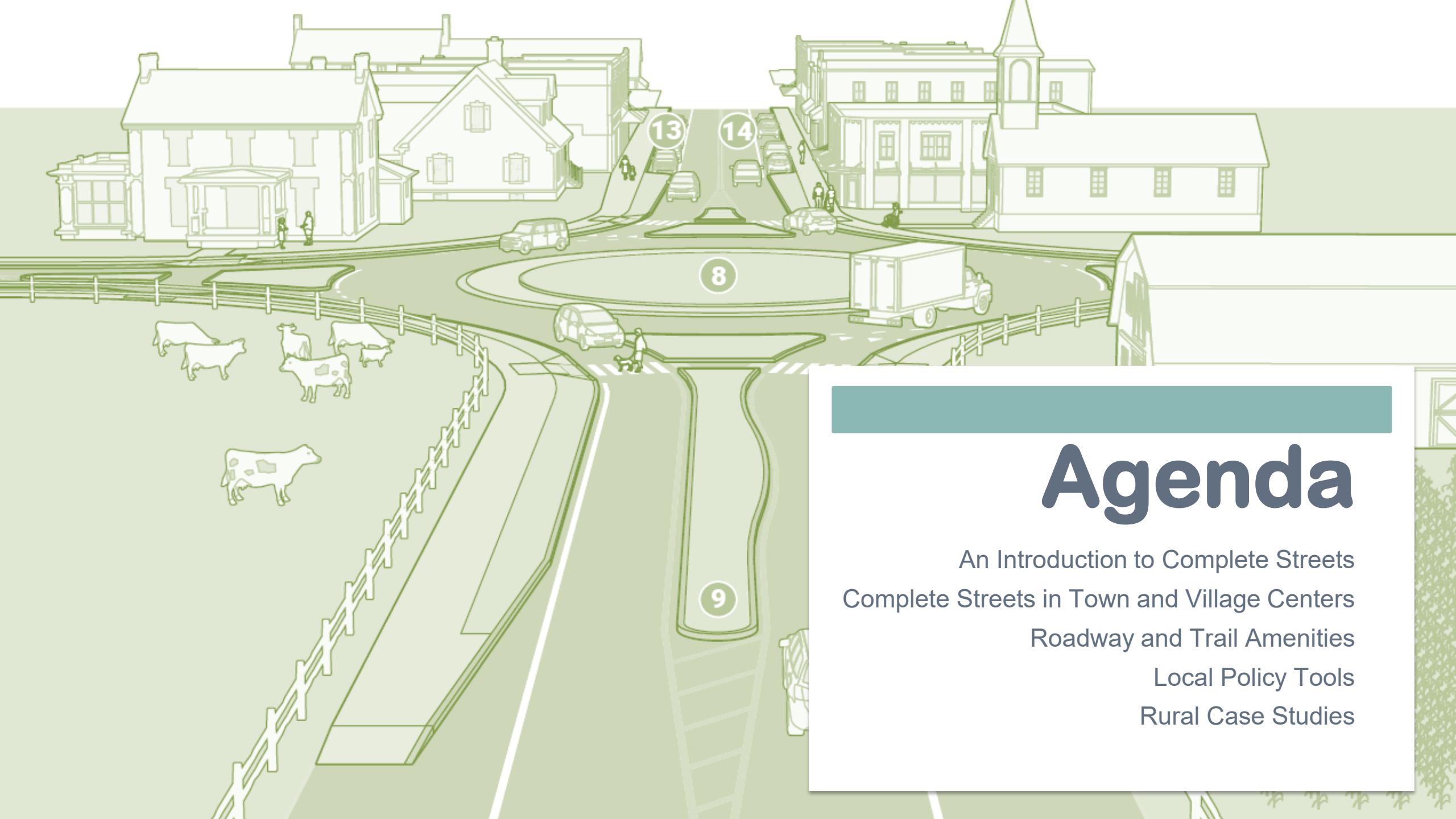
Francisco Gomes, AICP, ASLA – FHI

Jeff Brubaker, AICP – Toole Design

Northwest Hills Council of Governments
August 15, 2019

Presenter: Jeff Brubaker, AICP

Toole Design



Agenda

An Introduction to Complete Streets
Complete Streets in Town and Village Centers
Roadway and Trail Amenities
Local Policy Tools
Rural Case Studies

What are Complete Streets?

- Streets designed to be safe and comfortable for people using all modes of transportation and all ages and abilities.
 - Pedestrians, bicyclists, public transit users, and drivers
- Not all *streets* have to accommodate all users, but a Complete Streets *network* does serve all users.



Image source: Toole Design

What are Complete Streets Policies?

- Formal commitment to a Complete Streets approach for future transportation projects
- Adopted or approved by Municipalities, MPO/COGs, or States
- 10 municipal policies in CT, plus state law/CTDOT policy
- Draft CRCOG policy

Recommended 10 policy sections
(National Complete Streets Coalition)

- Vision and intent
- Diverse users
- Commitment in all projects and phases
- Clear, accountable expectations
- Jurisdiction
- Design
- Land use and context sensitivity
- Performance measures
- Project selection criteria
- Implementation steps

Complete Streets Policy Adoption by Year

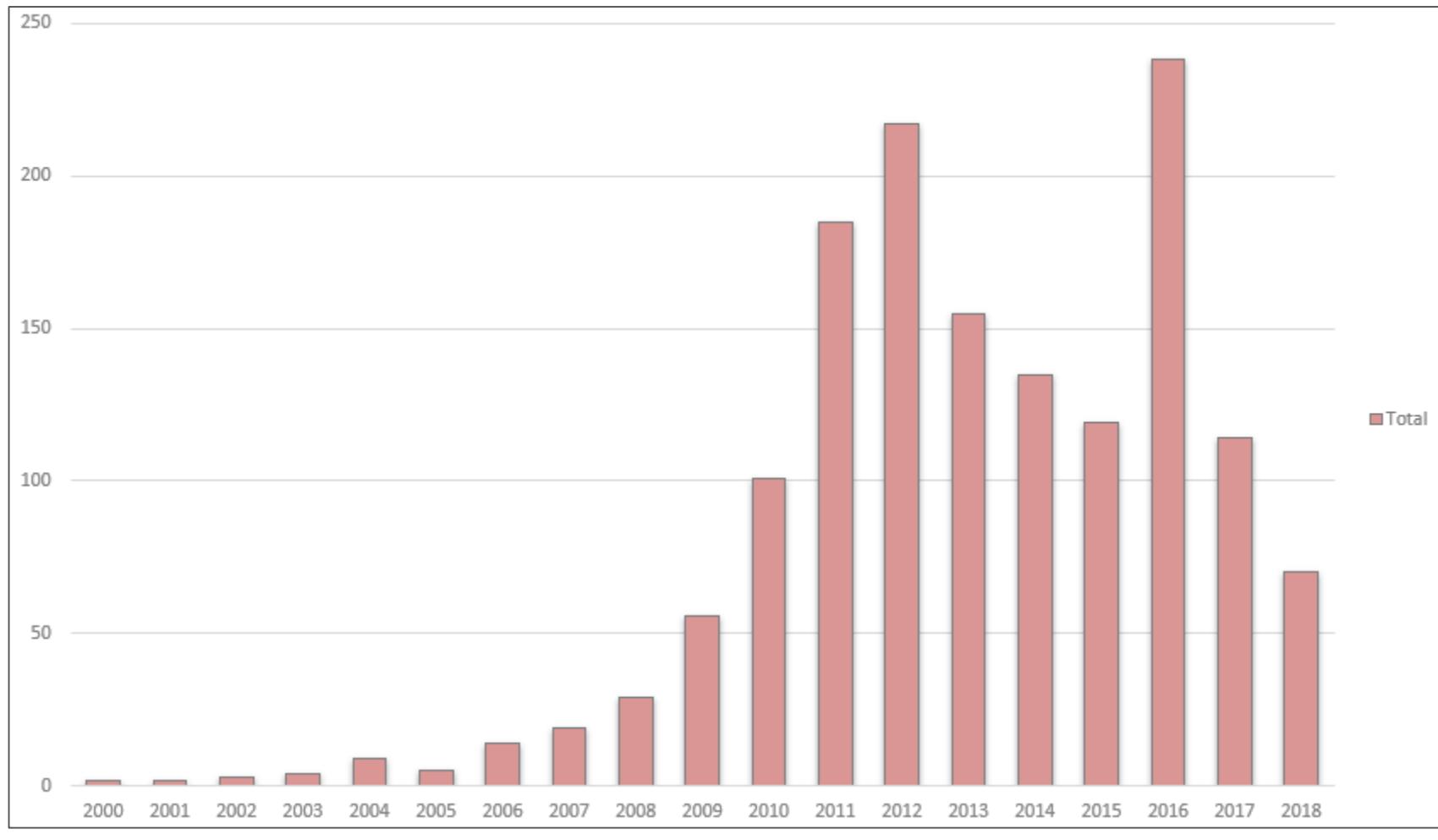


Chart based on data from Smart Growth America, 2019

Components of Complete Streets

Components of Complete Streets

- Pedestrian improvements
 - Installation or improvement of sidewalks, high-visibility crosswalks, ADA-compliant curb ramps, and curb extensions.
- Bicycle improvements
 - New or updated bicycle lanes, paths, and boulevards.
- Road diets
 - Removing through lanes, inserting center turn lanes, and adding bikeways or bike lanes
- Traffic calming
 - Narrowing vehicular lanes and/or shortening curb radii.

Before



Swansea, SC. Image source: Toole Design

Before and After (Rendering)



Swansea, SC. Image and rendering sources: Toole Design

Why Complete Streets in Rural Communities?

■ Health

- Rural residents are older than the general population and suffer from higher rates of physical inactivity and chronic ailments like obesity and diabetes.
- Only 19% of the US population lives in rural areas, but 58% of fatal crashes occur in these communities.



Vancouver, BC, Image from Toole Design

Why Complete Streets in Rural Communities?

Economic

- Complete Streets can support traditional main streets.
- Complete Streets give people travel choices and the potential to lower household transportation costs.
- Complete Streets tend to have a positive effect on property values.
- Attractive places to walk and bike can bring private investment and tourism spending.



Image from Toole Design

Economic Benefits of Trails

- Studies in Pennsylvania, Maryland, New York, and Utah have all found that the presence of trails draws tourists and their dollars to an area.
 - Most studies find that visitors from outside the area spend ~\$100 daily on goods and services.



Image from Toole Design

Why Complete Streets in Rural Communities?

- Sensitive to Rural Contexts
 - Consider surrounding land uses, travel needs of residents and users, and other factors
 - Examples of design approaches:
 - On rural roads outside of town: sidepaths, wide shoulders
 - In town and village centers: sidewalks, bike facilities, streetscape amenities, car and bike parking, bus stops, etc.
 - At transitions to town/village main streets: gradually introduce a lower design speed



Complete Streets in Town and Village Centers: Pedestrian Actions

Complete Sidewalk Networks



Wide Sidewalks with Decorative Elements

Trees, benches, and specialized pavers



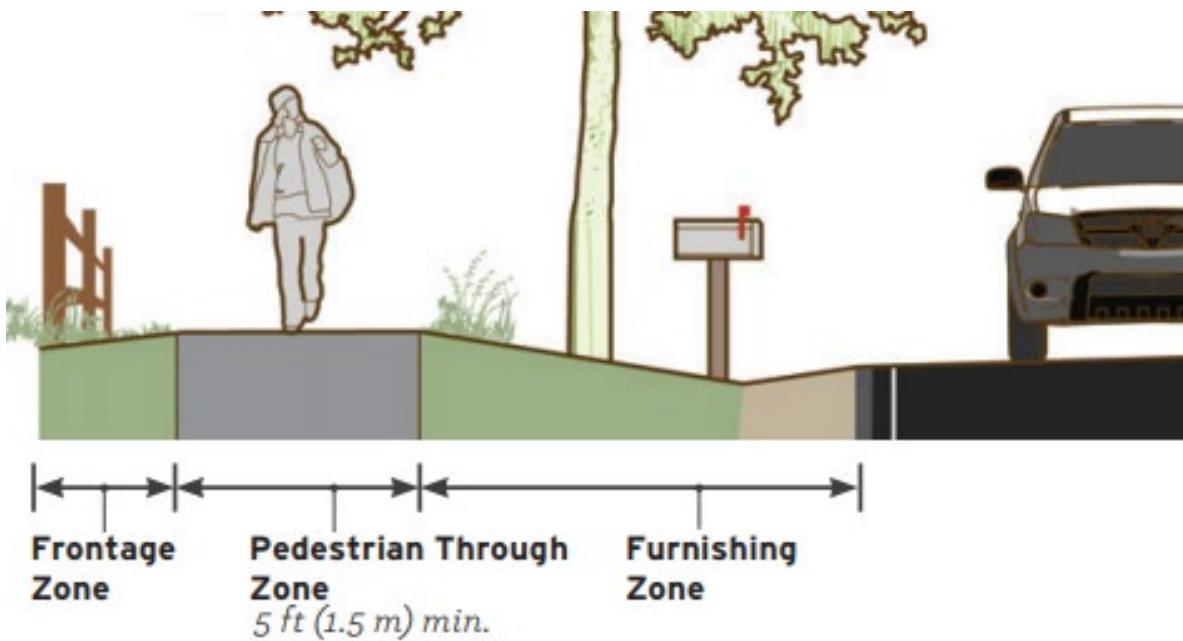
Curb Extensions and ADA Ramps

Shorten crossing distances and boost crossing visibility



All images from Toole Design

Sidewalk Dimensions



Volume And User Mix	Frontage Zone	Pedestrian Through Zone	Furnishing Zone	Total Width
Constrained Minimum	1 ft (0.3 m)	5 ft (1.2 m)	2 ft (0.6 m)	8 ft (2.4 m)
Recommended Minimum	2 ft (0.6 m)	6 ft (1.5 m)	4 ft (1.2 m)	12 ft (3.6 m)



Ideally 6' in commercial areas.

Complete Streets in Town and Village Centers: Pedestrian Actions

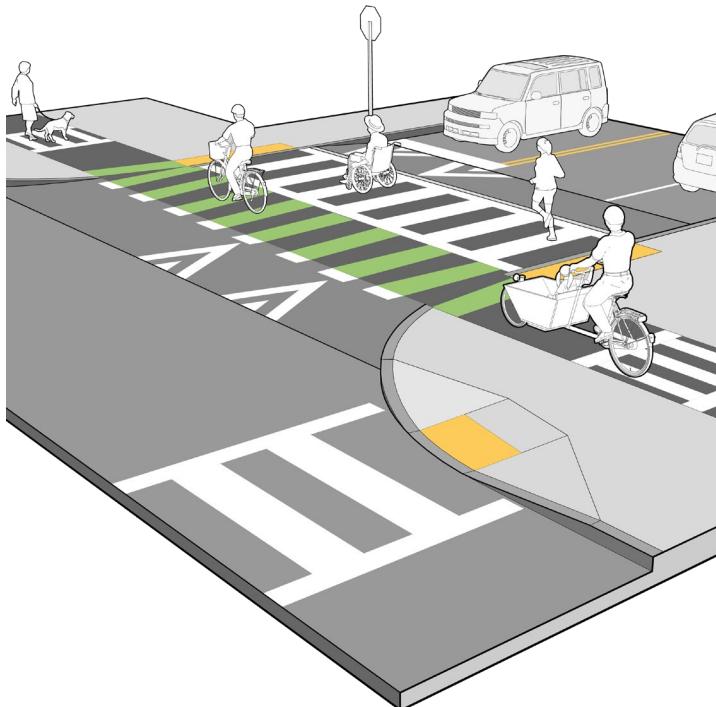
High-Visibility Crosswalks

Zebra patterns improve visibility. Can be modified to highlight community attributes.



Raised Crossings*

Allow improved visibility of pedestrians while providing traffic calming.



Perpendicular Ramps

Shorten crossing distance and improve visibility.



* Only allowable at lower speeds.

Images from Toole Design

Complete Streets in Town and Village Centers: Bicycle Actions

- No perfect facility for all uses.
 - Each street is different.
 - Some factors informing facility type and design:
 - Traffic speed and volume
 - Mix of vehicles
 - Street directionality
 - Presence of on-street parking and loading zones
 - Driveway cuts
 - Right-of-way and street width
 - Predicted users
 - Aesthetics
 - Maintenance considerations
 - Cost

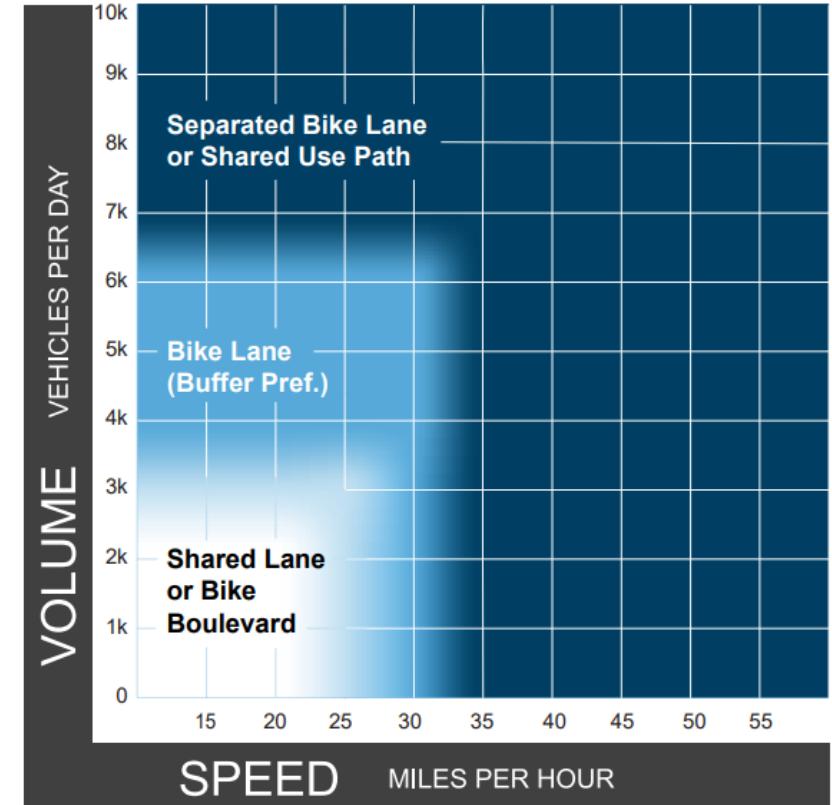


Image from Toole Design; text reference: FHWA

Bike Facilities for Town Centers

- Higher speeds and volumes: physical separation
- Mixed traffic: lower speeds and volumes
- Shared Lanes and Bike Boulevards are generally used on narrower, non-primary streets with limited through traffic and lower speeds.

Figure 9: Preferred Bikeway Type for Urban, Urban Core, Suburban and Rural Town Contexts

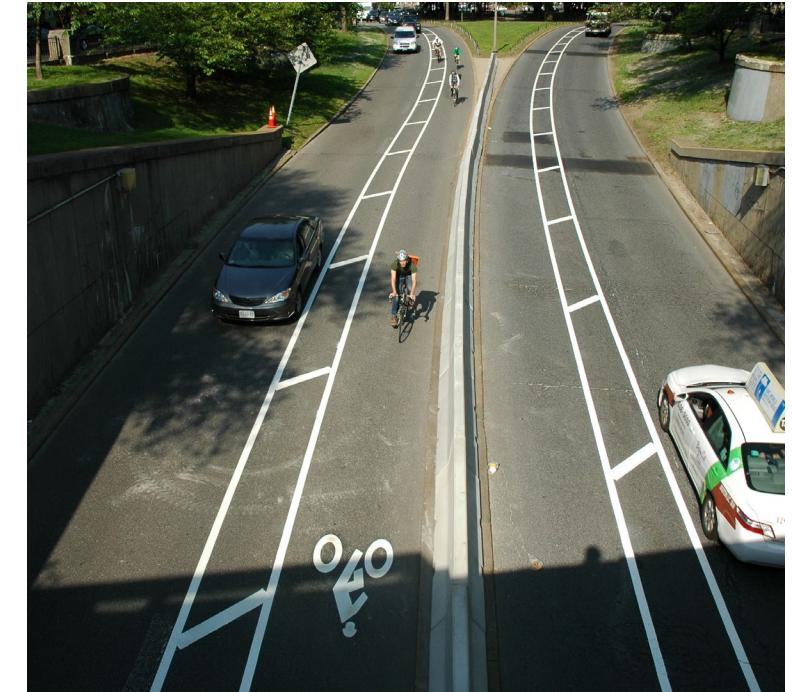
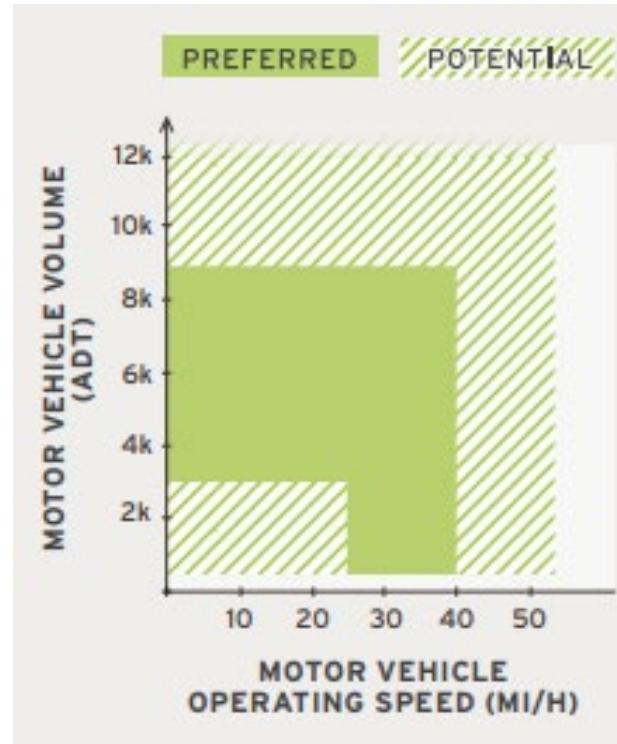


Notes

- 1 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.
- 2 Advisory bike lanes may be an option where traffic volume is <3K ADT.
- 3 See page 32 for a discussion of alternatives if the preferred bikeway type is not feasible.

Complete Streets in Town and Village Centers: Bicyclist Actions

- **Bike Lane:** Exclusive but unprotected space for bicyclists marked with solid lines.
 - Preferred minimum width of 6.5' (absolute minimum of 4').
 - Used on major streets within and between built-up areas.
 - May also use a buffer in areas with higher volumes and speeds.
 - Moderate-stress

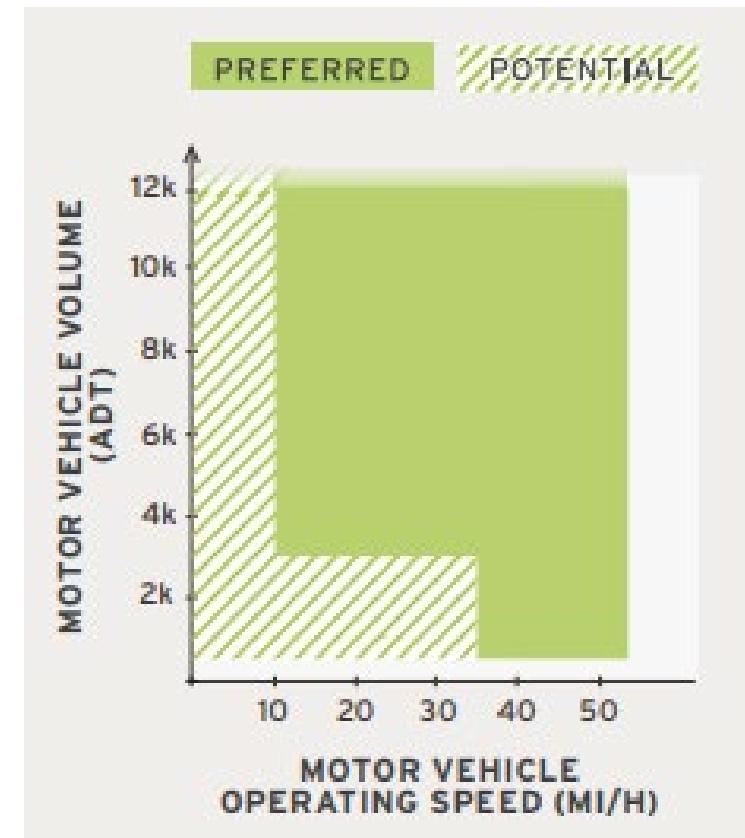


FHWA, 2016 (left) and Toole Design (right)

Complete Streets in Town and Village Centers: Bicyclist Actions

- **Separated Bike Lane:** Bicycle facility that is physically separated from vehicle traffic.
 - Types of separations include planters, posts, bollards, concrete barriers, parked cars, or some combination of those.
 - Can be either at street or sidewalk level.
 - Low-stress

	Width (Minimum)	Width (Preferred)
One-Way	5'	7'
Two-Way	10'	12'



FHWA, 2019 (left) and FHWA, 2016 (above)

Complete Streets in Town and Village Centers: Bicyclist Actions

- **Shared-Use Path:** Separate, bidirectional travel route separate from motor vehicles.
 - Usually 10'-12' (8' for short segments, 14' if high traffic is anticipated)
 - Can be used by bicyclists and pedestrians.
 - Used to connect built-up areas, but also can provide connections within towns and villages.
 - Often run along disused rail tracks, streams, or greenways
 - Low-stress



Toole Design

Complete Streets in Towns and Village Centers: Bicyclist Actions

Sidepath: Separate, bi-directional travel route parallel to a road.

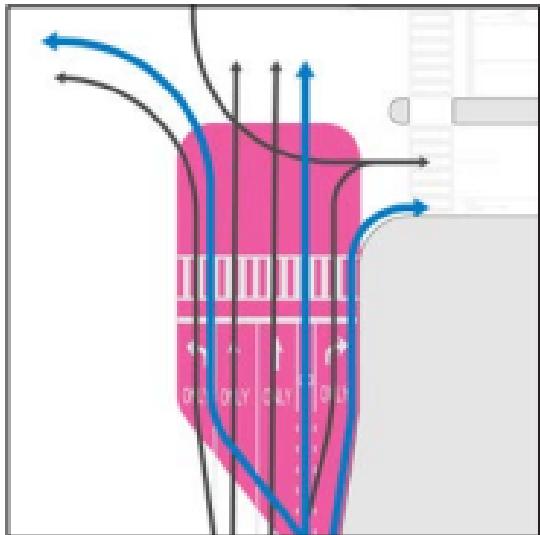
- Usually 10'-12'
- Used within towns and villages, and in rural contexts.
- Often used along high-speed and high-volume roads
- Low-stress



Toole Design

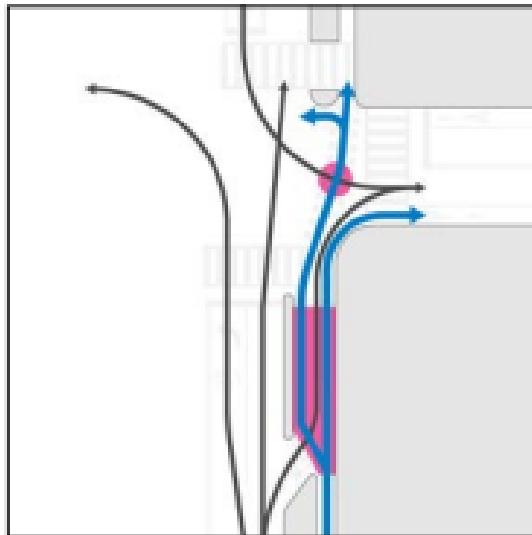
Comparison of Bike Facility Safety at Intersections

Exposure Level:
High



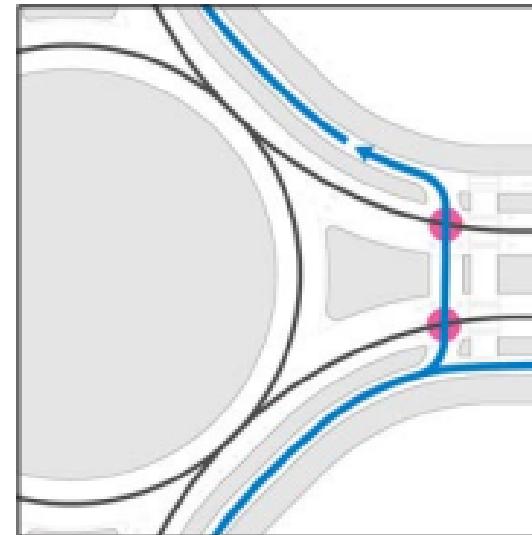
CONVENTIONAL BIKE LANES
AND SHARED LANES

Exposure Level:
High to Medium



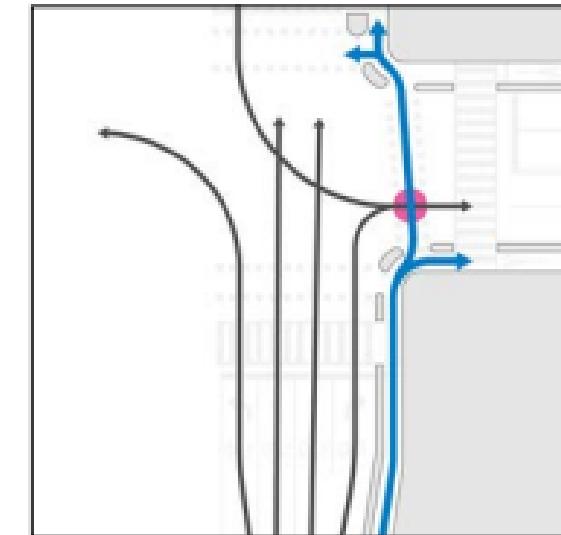
SEPARATED BIKE LANES WITH
MIXING ZONES

Exposure Level:
Medium to Low



SEPARATED BIKE LANES
THROUGH ROUNDABOUTS

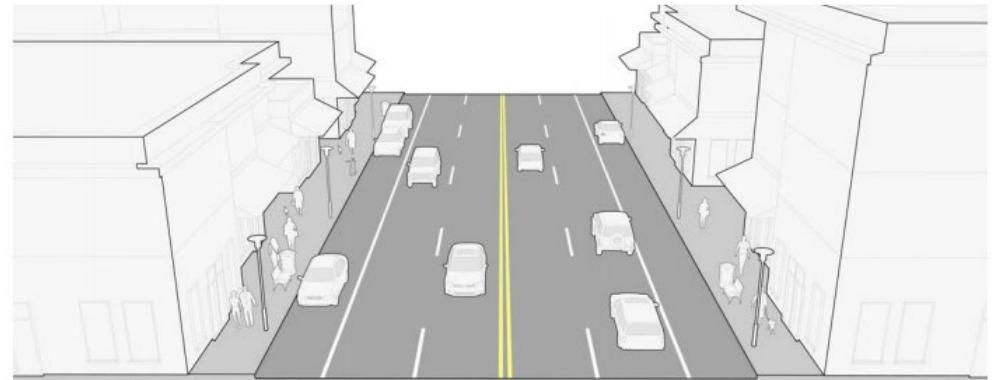
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Low



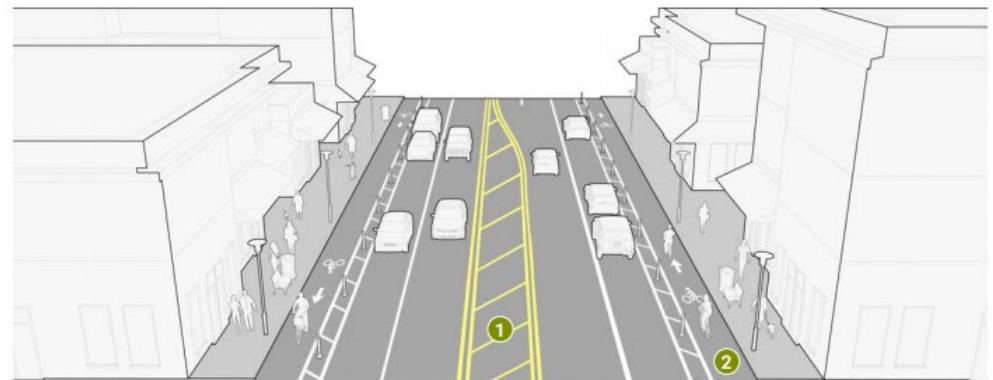
PROTECTED INTERSECTIONS

Complete Streets in Town and Village Centers: Traffic Calming

- **Road Diets:** Most commonly a reduction of 4 lanes to 3 (with a center-turn lane and new bicycle lanes)
 - Can improve traffic flow and business access in certain situations by providing dual left turn lanes.



BEFORE ROAD DIET



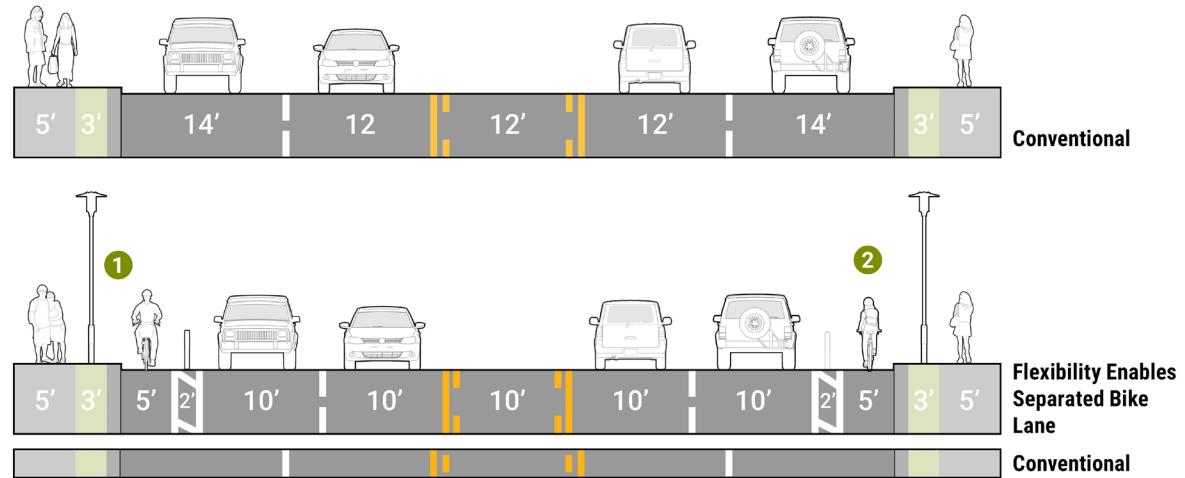
AFTER ROAD DIET

Complete Streets in Town and Village Centers: Traffic Calming

- **Reduced Lane Width:**

Narrower lanes slow traffic, increase safety, and provide space for other users.

- 12' is the common width, but AASHTO allows 10' - 11' lanes.
 - Research has found that 10' -11' lanes on urban and suburban arterials do not reduce capacity.

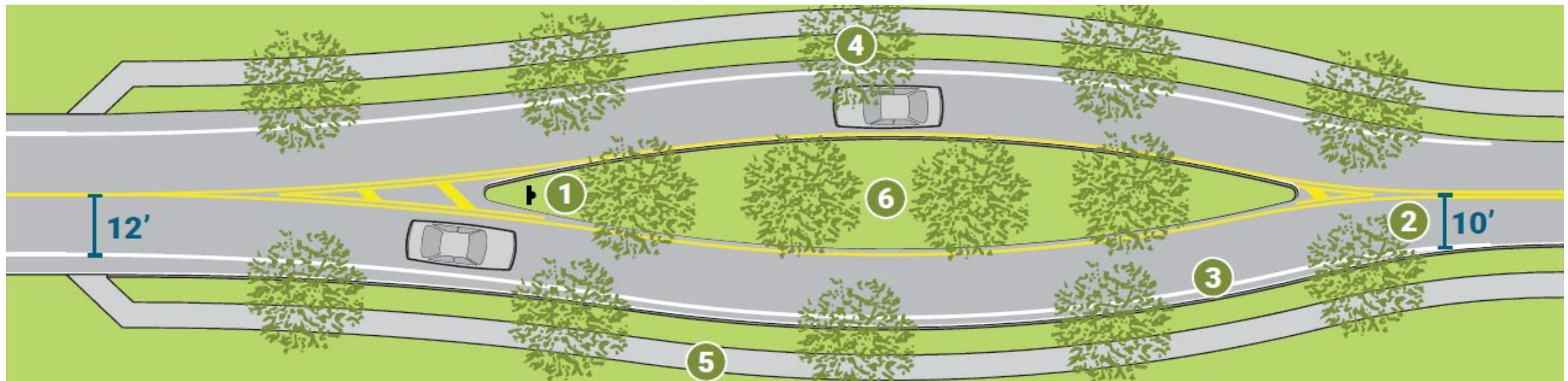


Note: One or both of the outside vehicular lanes in all of the graphics could serve as on-street parking, which would provide a traffic calming effect and a physical buffer for pedestrians and bicyclists. For more information, see design topics on [Road Diets and Traffic Analysis](#) and [Traffic Calming and Design Speed](#).

Complete Streets in Town and Village Centers: Slowing Traffic at Transition Zones

Strategies with Horizontal Deflection

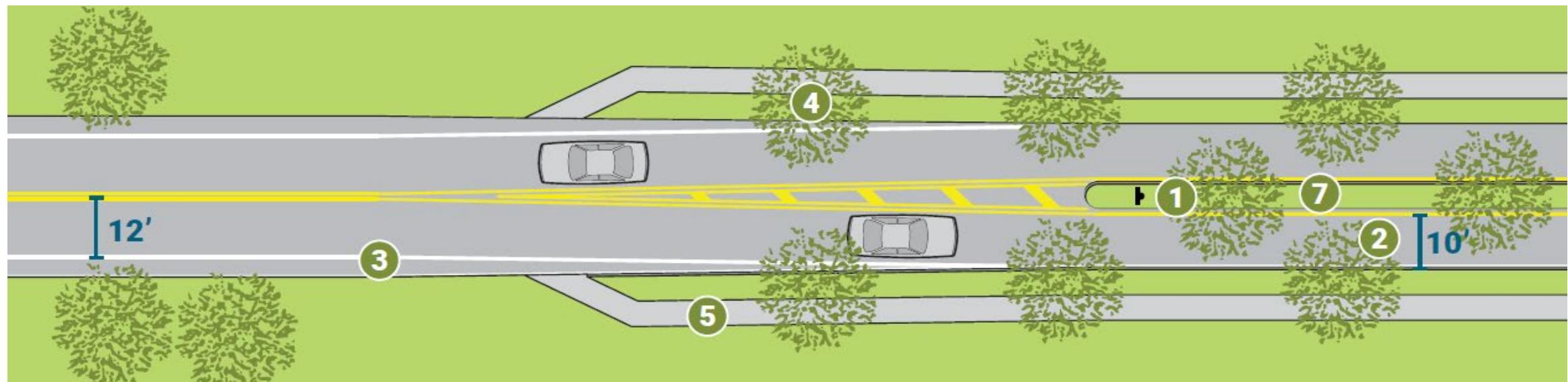
- 1) Gateway sign; 2) Narrowing of lanes; 3) Removal of shoulder; 4) Introduction of curb and street trees; 5) Sidewalk buffer and sidewalk; 6) Horizontal deflection

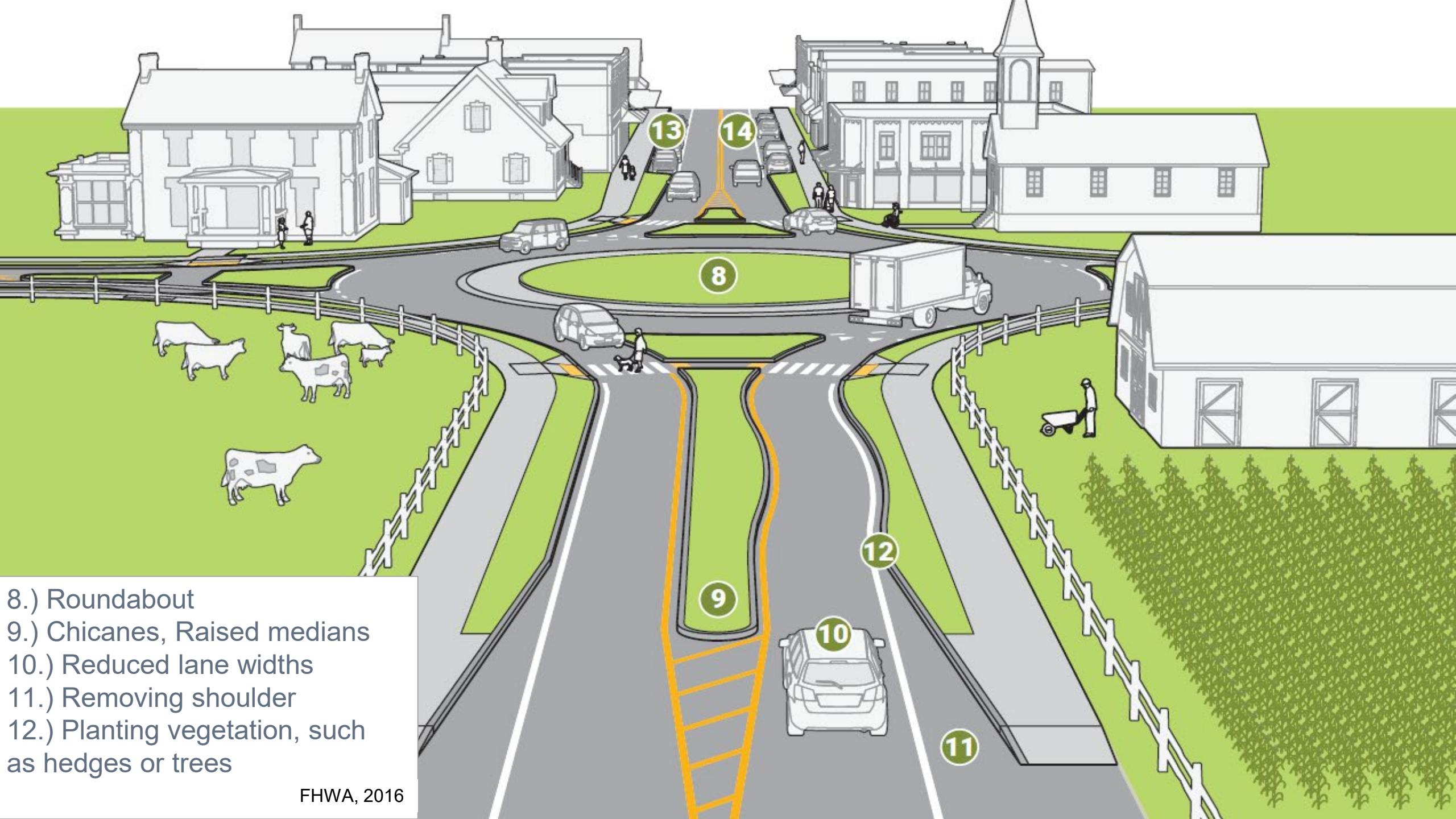


Complete Streets in Town and Village Centers: Slowing Traffic at Transition Zones

Strategies with a Median (in more constrained environments)

- 1) Gateway sign; 2) Narrowing of lanes; 3) Removal of shoulder; 4) Introduction of curb and street trees; 5) Sidewalk buffer and sidewalk; 6) Median



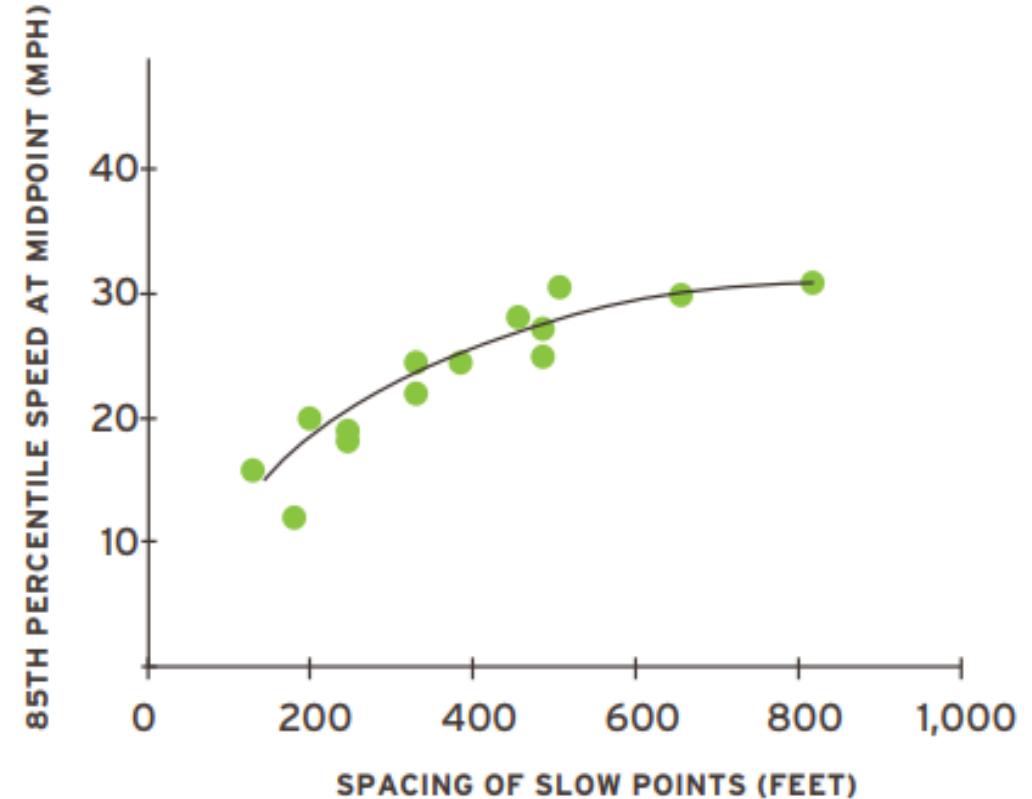


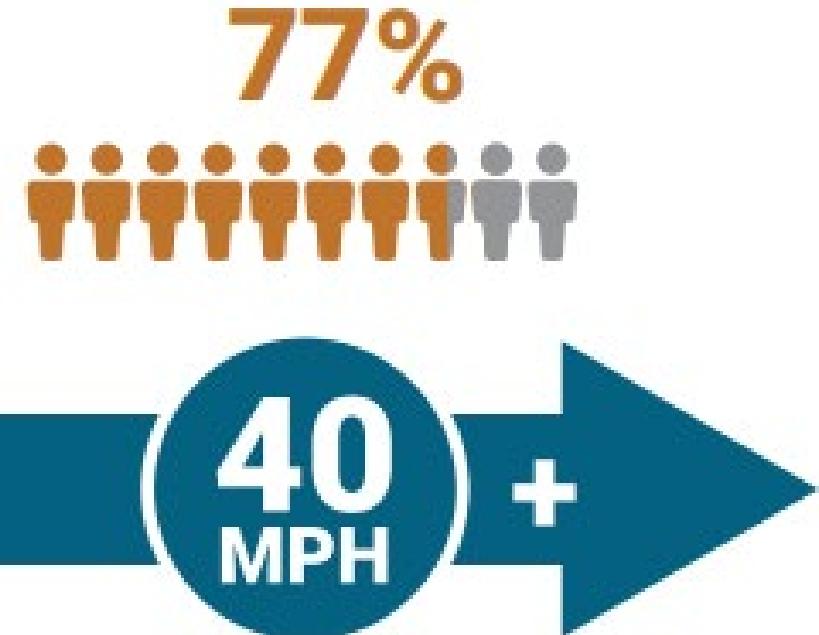
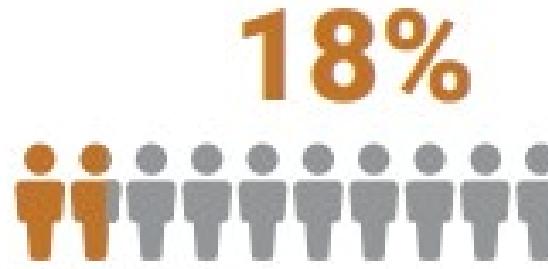
- 8.) Roundabout
- 9.) Chicanes, Raised medians
- 10.) Reduced lane widths
- 11.) Removing shoulder
- 12.) Planting vegetation, such as hedges or trees

Key Points for Transitioning Traffic

- Actual speeds cannot be changed just through speed limit changes; roadway geometry usually must be changed to fit the context.
- Consistent and repeated warnings to drivers are usually required to ensure reduced speeds in towns and villages.

Speeds vs. Spacing of Speed Reduction Measures

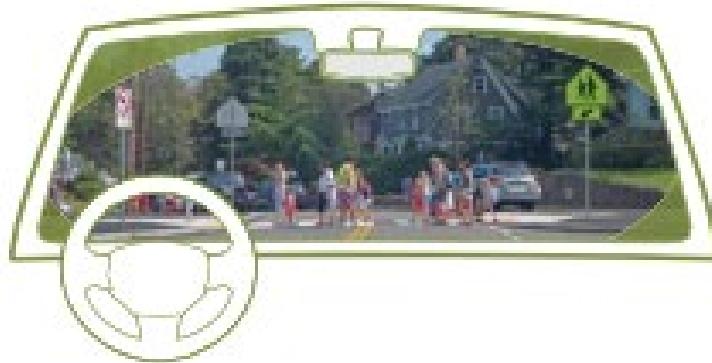




- **20 MPH**

30 MPH

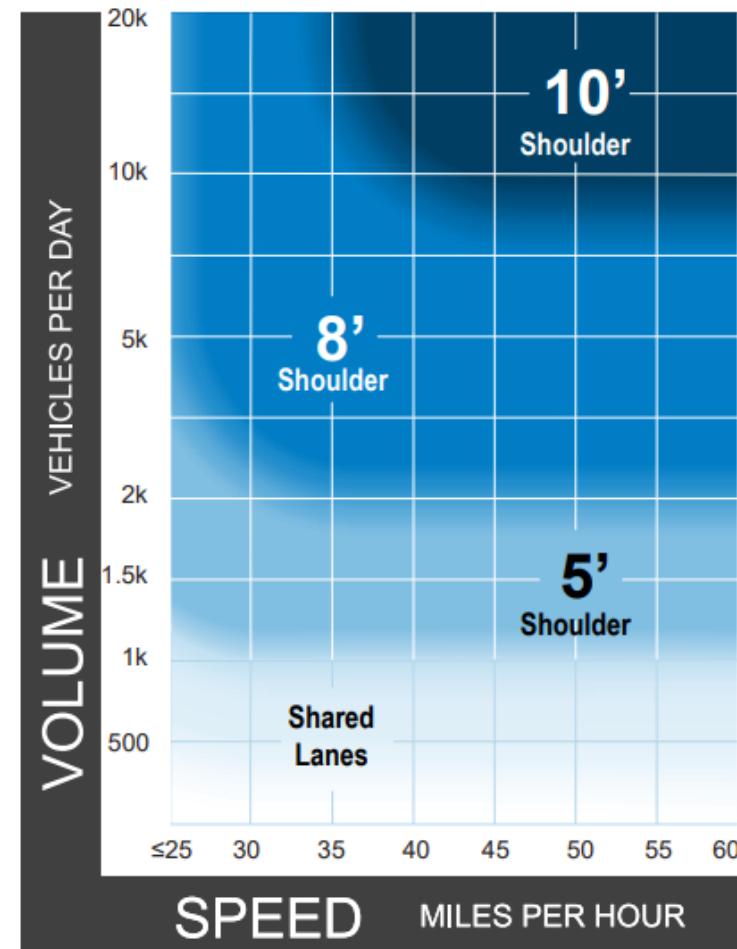
40 MPH +



Speed dramatically increases risk for pedestrians and bicyclists.

Bicycle Facilities on Rural Roads

- For bicycle facilities along rural roads, consider the facility options to the right.
- Greater speed and traffic volume necessitate wider shoulders.



Complete Streets on Rural Roads: Bicyclist Interventions

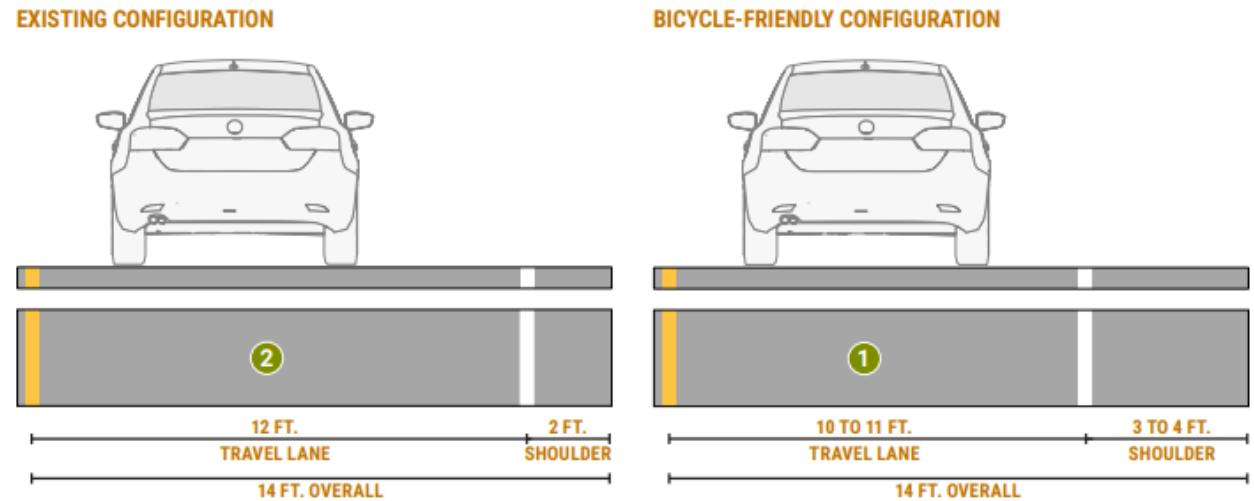
- **Paved Shoulders:** Space on the edge of a roadway that serves bicyclists (and sometimes pedestrians)
 - Can include contrasting pavement, markings to delineate space and/or edge line rumble strips.
 - Used on major streets or highways between and within built up areas.
 - Higher-stress



FHWA, 2017 (left) and Toole Design (right)

Paved Shoulders

- At minimum, shoulders should be 4' (5' where guardrails and curbs are present)
- Space for shoulders can often be taken from travel lanes (right).
 - This also calms traffic.



Paved Shoulders



- Paved shoulders reduce the probability of conflict.
 - There is an exponential relationship between traffic volumes and conflicts.
 - Without shoulders, a bicyclist encounters nine times as many conflicts on a road with 1,500 vehicles daily as compared to a road with 500 vehicles daily.

Complete Streets on Rural Roads: Bicyclist Interventions

- **Sidepaths** can also be used on rural roads, where demand is moderate to high and traffic speeds are high.
 - Maintain rural character, especially when vegetation is used for separation
 - Sidepaths must be placed further back from road at higher speeds (below)

Adjacent Road Speed Limit (Mi/h)	Recommended Sidepath Separation Distance at Crossings
< 25 mi/h	6.5 ft (2.0 m)
35–45 mi/h	6.5–16.5 ft (2.0–5.0 m)
≥ 55 mi/h	16.5–24 ft (5.0–7.0 m)

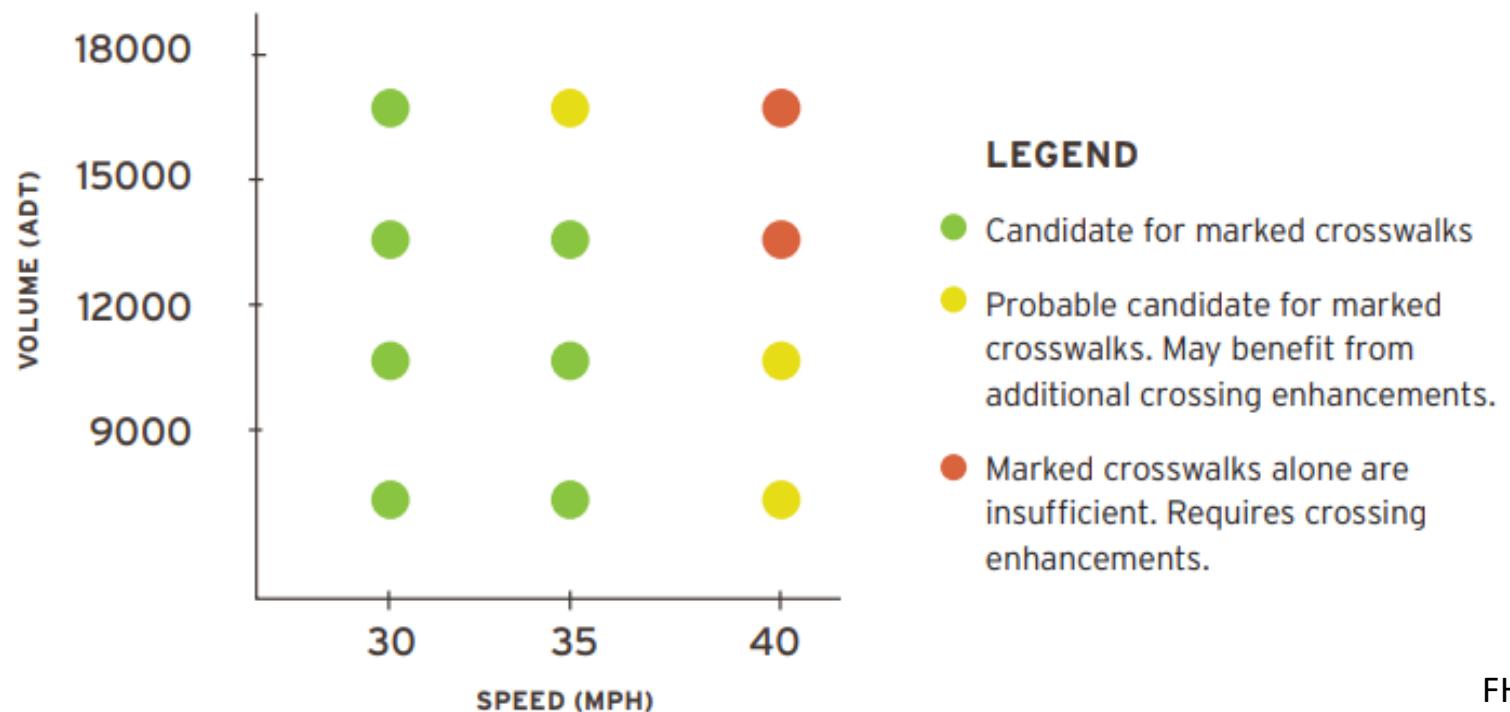


FHWA, 2016

Access to Trails and Street-Trail, Street-Sidewalk Intersections

- Crossing will depend upon traffic volume and speed
 - High-visibility crosswalk interventions are preferred at uncontrolled marked crossings

Speed & Volume Calculations, Two-Lane Roads



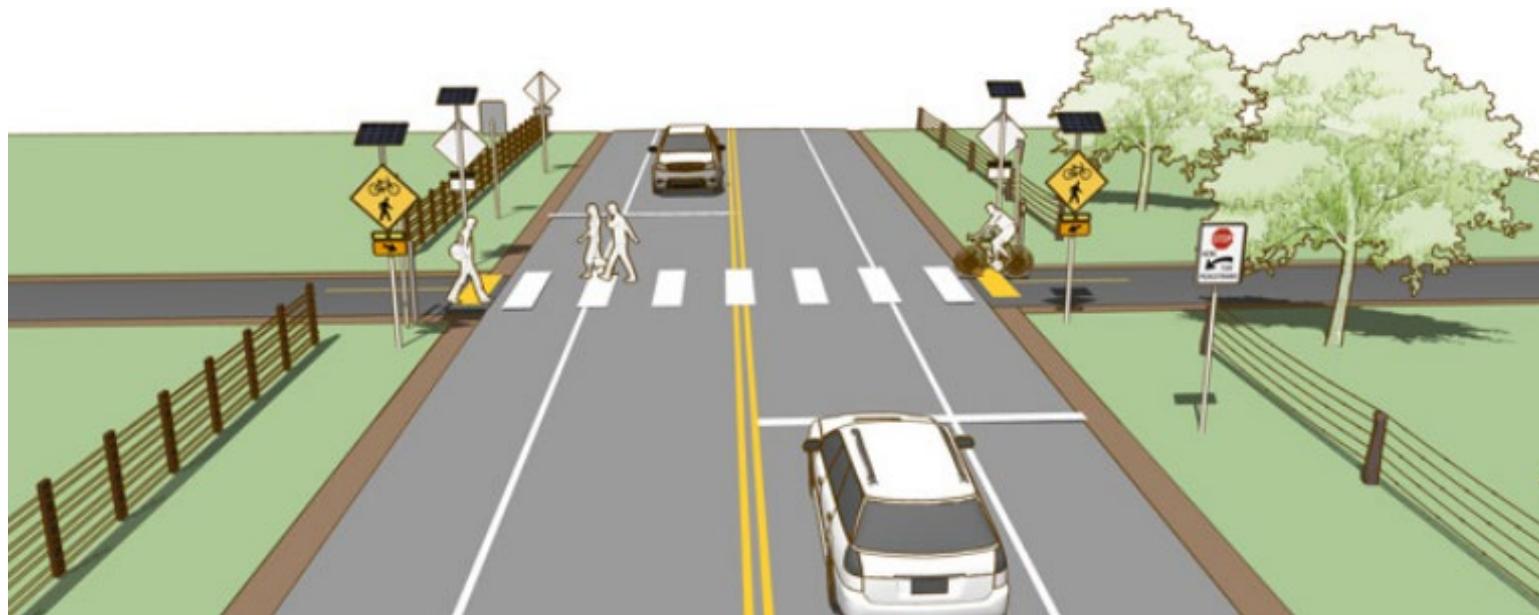
Median Crossing Island

- Used for roadways with high volumes and/or speeds, and on roads with 3+ lanes.
 - Useful for those traveling slower (for example, the elderly, or those with disabilities)



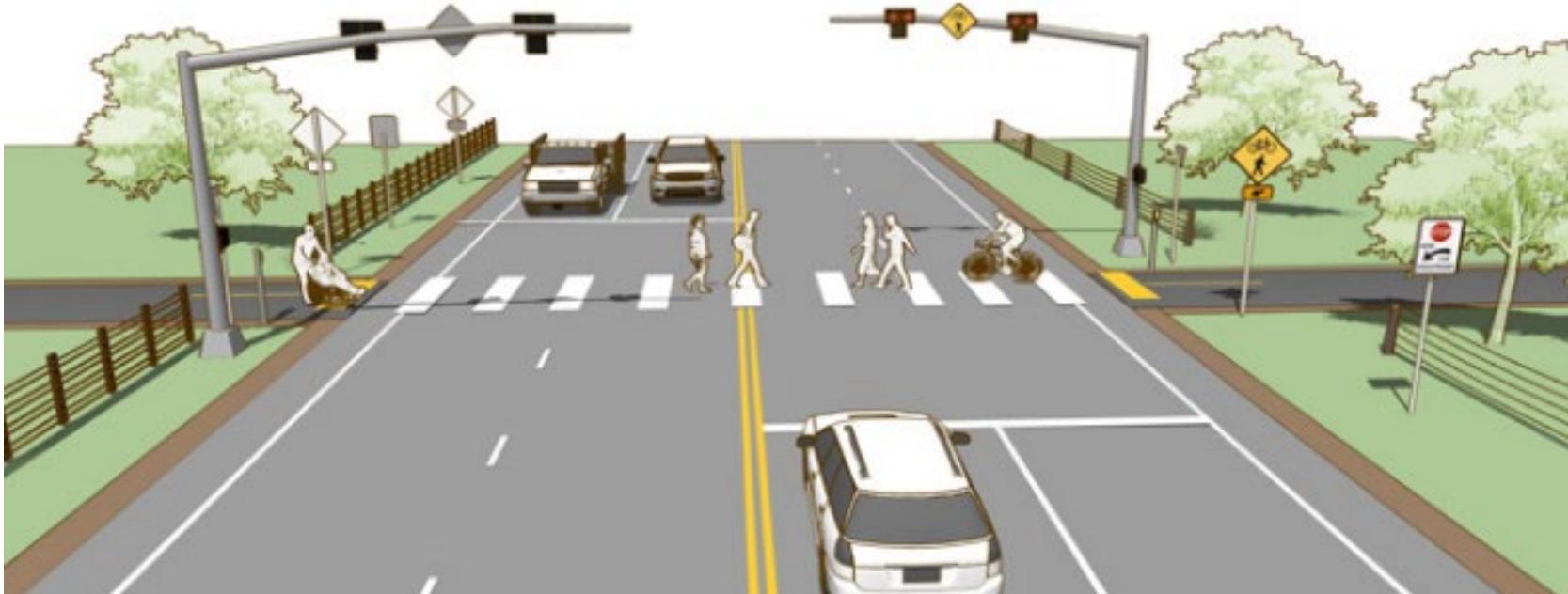
Rectangular Rapid Flashing Beacon (RRFB)

- A device that rapidly flashes to increase driver yielding rates at uncontrolled intersections.
 - Useful for areas where there is a documented low yield rate.



Pedestrian Hybrid Beacon (PHB)

- A device that creates a red stopping signal to drivers
 - Has a similar yielding rate to a conventional traffic signal.
 - Used for undivided roadways with at least 4 lanes.



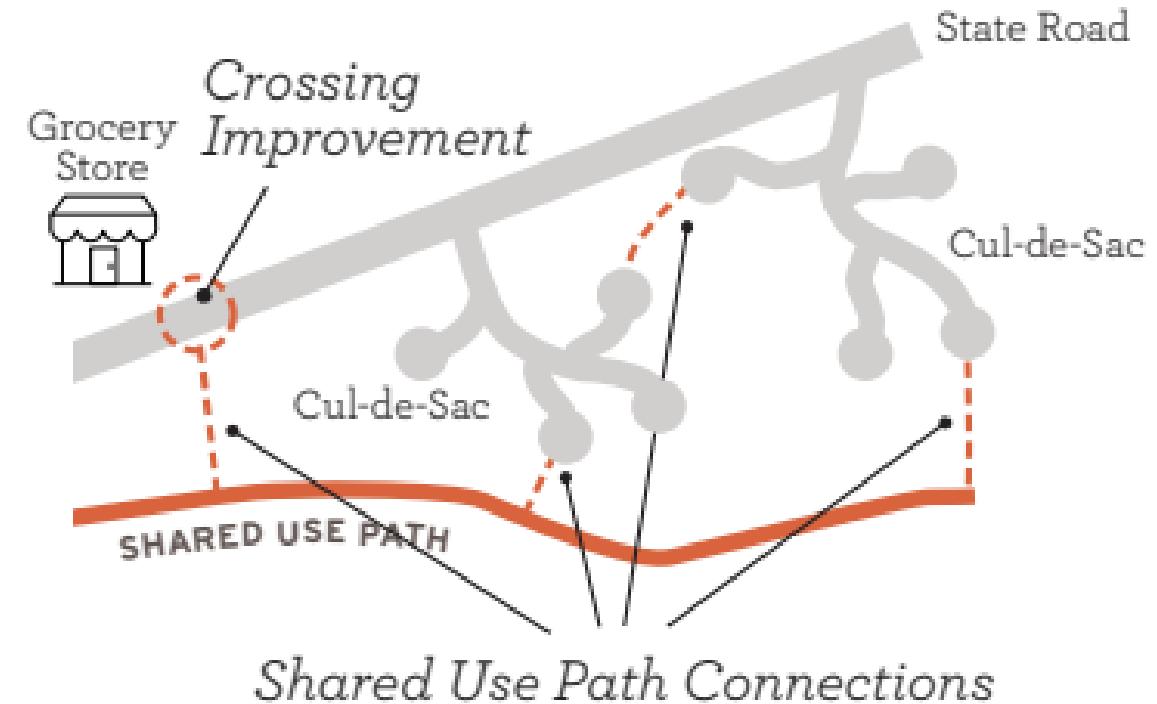
Access to Trails: Wayfinding

- Signage that assists people navigate onto trails.
- Provides simple, concise messages to help people understand where they are relative to landmarks and popular destinations.



Trail Connections

- Trails can only serve the community if connections are easily made. How?
 - Short on- and off-street connections to cul-de-sacs
 - Pay attention to short, uncomfortable road segments that may discourage use on the whole system.



FHWA, 2016

Example of Collaboration

- Aldie, Middleberg, and Upperville, VA
 - Small communities along US Route 50
 - Worked with the DOT to incorporate roundabouts, reduced speed limits, raised medians, and high-visibility crosswalks at town entrances, and through the communities.



Example of Collaboration

- Capay, CA
 - State Route 16 runs through this small town of ~130 people in Yolo County
 - Capay worked with Caltrans, the county, SACOG (the MPO), and a local tribal government to
 - Install colored paved shoulders
 - Restripe
 - Improve signage
 - Improve lighting in this rural section of California



**Presenter: Francisco Gomes,
ASLA, AICP**

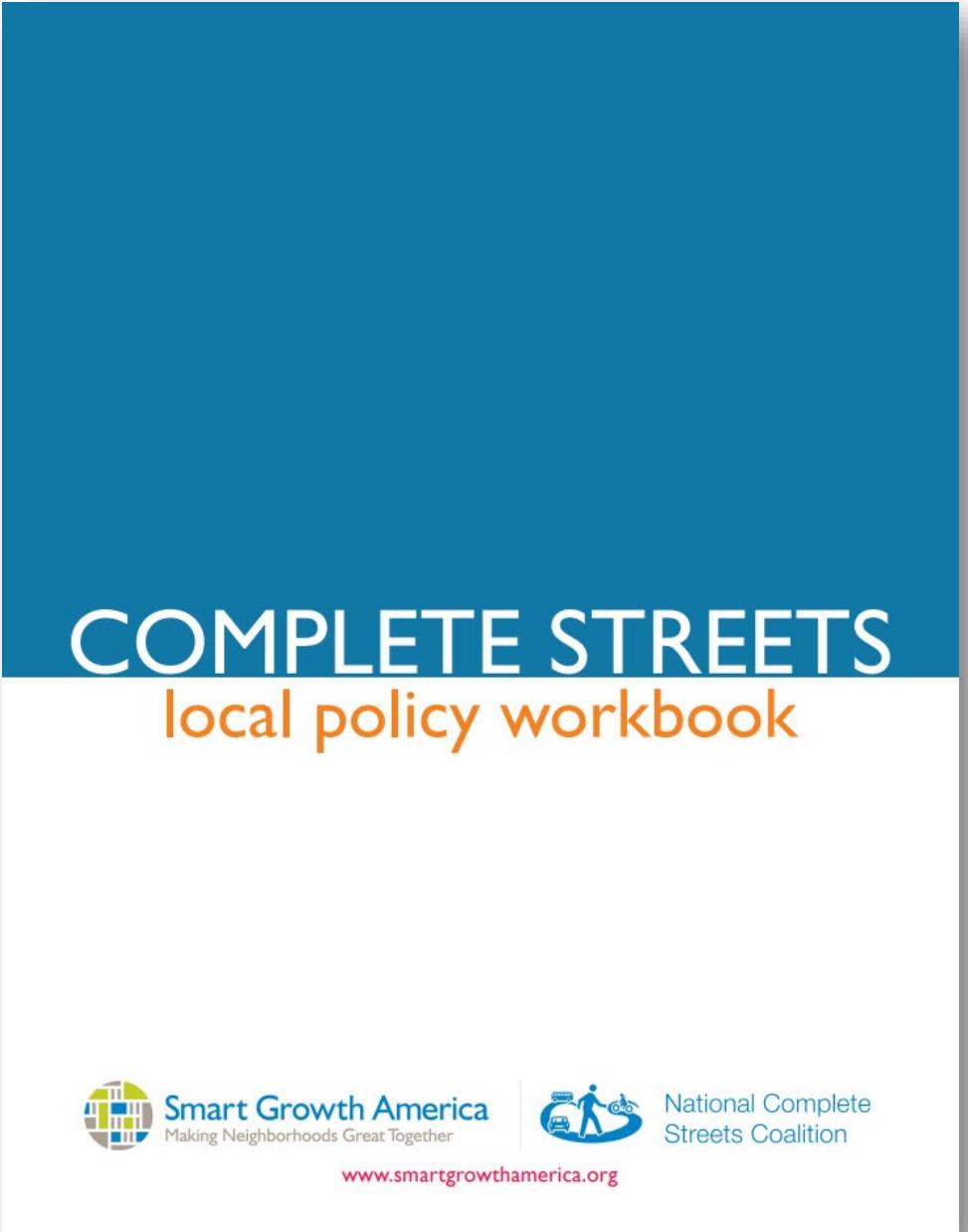
FHI

Local Policy Tools

For Complete Streets

Local Policy Tools for Complete Streets

- Plan of Conservation & Development (POCD)
- Pedestrian and Bicycle Masterplan
- Zoning, Design Guidelines, and Subdivision Regulations
- Municipal Ordinance (Complete Streets Ordinance)



Plan of Conservation & Development

- The POCD planning process and document provides an opportunity to prioritize Complete Streets policies and investments.

Goal 1

Improve usage of transit and alternative modes of transportation.

Strategy

- Adopt a policy to promote a shift in transportation modes from single-occupancy vehicles to transit, bicycling, and walking by investing in bicycle and pedestrian infrastructure. ● ●
- Work with the Greater Bridgeport Transit Authority (GBT) to identify and implement improvements and funding that are needed to better connect Bridgeport to the region via bus service. ●
- Include GBT in site plan review to make sure that project proposals enhance, and do not hinder, bus access. ●
- Work with GBT and regional municipalities to establish and support a regional bikeshare, last mile mobility program. ●
- Promote access to bus, ferry, and commuter rail and preserve easy, convenient, and seamless transitions between transit modes. ●
- Promote coordination among different transportation providers/regulating entities to encourage multi-modal utilization of the transportation network. ●
- Work with GBT and MetroNorth to improve transportation access and service. ●
- Support improvements to fixed-route bus service through technology enhancements. ●
- Consider working with Bridgeport employers to offer incentives that encourage the use of transit or carpooling instead of single-occupancy vehicles for commuting. ●
- Leverage on-demand technologies to improve and expand paratransit. ●

- Consider an increase in freight moving to and through Bridgeport by rail, barge or other means, and the infrastructure improvements that would be necessary to accommodate such an increase. ●

- Work with GBT and Board of Education to best support student transportation.

Goal 2

Encourage density of development in areas that are well served by transit and are within walking distance of places of residence, employment, goods, and services.

Strategy

- Focus on redevelopment in close proximity to Bridgeport Station to maximize transit-oriented development opportunities in the area. ●
- Encourage the development of housing in the Downtown. ●
- Concentrate dense housing along commercial corridors with bus service. ● ●
- Work with the State, and other stakeholders, to develop strategies for improvements to the Downtown Bridgeport Train Station. ● ● ●
- Construct the East Bridgeport (Barnum) Train Station. ●
- Revise zoning in proximity of the planned Barnum Station to be more supportive of the development of a mixed-use job center. ● ●

Goal 3

Adopt a Complete Streets approach to transportation planning and improvements.

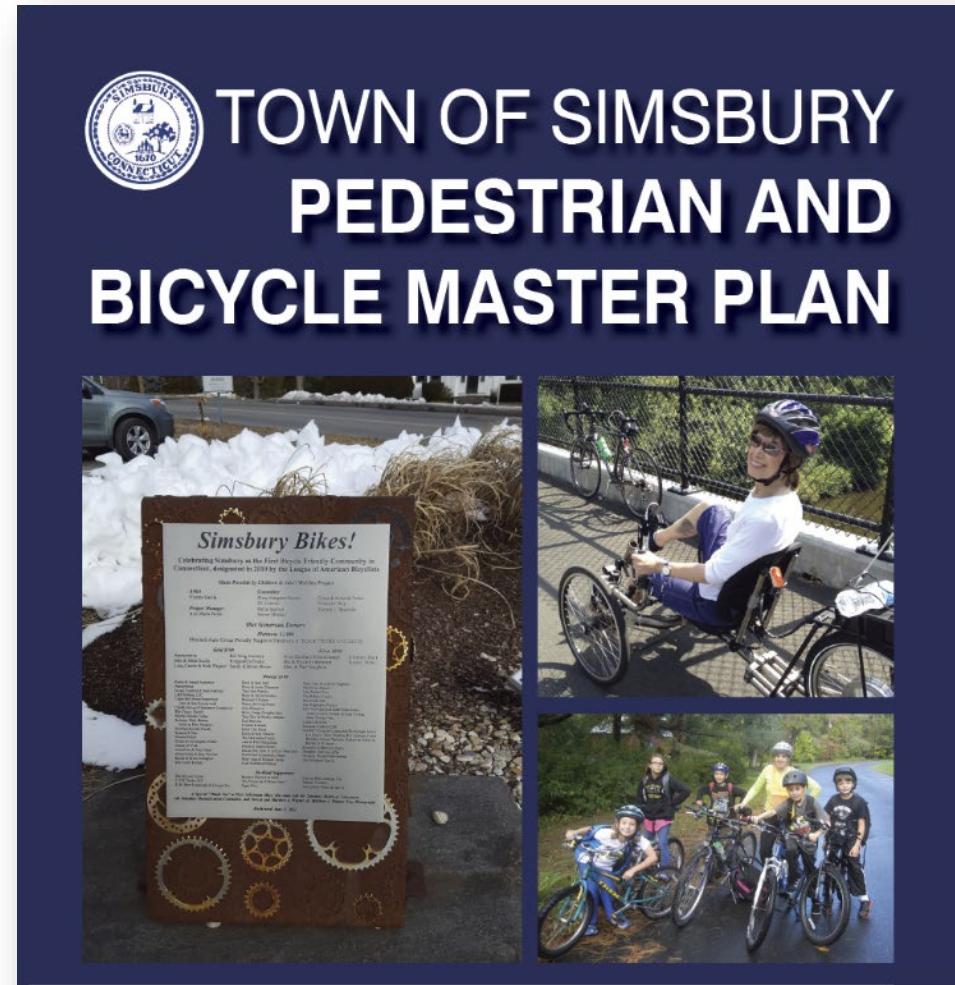
Strategy

- Adopt a Complete Streets policy. ● ●
- Improve the walkability of neighborhoods and connections between neighborhoods. ● ● ●
- Ensure adequate maintenance of sidewalks, pedestrian crossings, and pedestrian signals. ● ● ●
- Create a coordinated system of bicycle infrastructure. ● ●
- Improve pedestrian and bicycle wayfinding. ● ●
- Prioritize Safe Routes to School for lighting improvements, sidewalk repair, streetscapes, and other infrastructure improvements. ● ●

Dots correspond with a plan theme. Click to jump to theme.

Complete Streets/Pedestrian and Bicycle Masterplans

- Pedestrian and Bicycle Masterplans provide specific policy and infrastructure recommendations
 - Plans can be used to guide Capital Improvement Plans and leverage State and Federal grant funding



December 2018

Zoning, Design Guidelines, and Subdivision Regulations

- Zoning and design guidelines can be used to require or encourage property development that is Complete Streets friendly
- The provision of public sidewalk infrastructure can be required of development
- Height, bulk, and density incentives for the provision of public complete streets infrastructure can be provided

ARTICLE VI THOMPSONVILLE DISTRICTS

Section 6.0 Purposes

The purpose of the Thompsonville Districts, each of which is identified on the Thompsonville District Map is to encourage transit-oriented development in proximity to the planned commuter rail station at Main and North River Streets and to leverage and protect the unique historical and natural features of this area.

Section 6.9 Public Amenity Requirements (SEE FIGURES 6.12 AND 6.13) (for new construction of buildings 10,000 square feet of more)

Projects exceeding 10,000 square feet of gross floor area shall be required to provide publicly accessible amenities as follows:

1. The area of publicly accessible amenities shall be equal to or greater than two (2) percent of the gross floor area.
2. Public amenities shall be located in areas with pedestrian traffic or if such spaces are provided in the interior of a lot, pedestrian connections to the sidewalk network must be provided.
3. Public amenities shall be in the form of well-maintained lawn, brick-lain plazas or other aesthetic hardscape materials (excluding asphalt), including complementary landscaping and planting beds, or a combination thereof.
4. Where possible, open spaces, paths, parks or plazas shall be designed so that adjacent buildings have windows, terraces or other features that provide a visual connection between the building tenants and the public amenity.
5. Public amenities include but are not limited to items such as lighting, fountains, sculptures, public art, seating areas, and landscaping.



Figure 6.12: Example of Public Amenities



Figure 6.13: This example would NOT qualify as a Public Amenities

Complete Streets Ordinance

- A municipal Complete Streets Ordinance is most effective in guiding decisions made by a municipality in managing, maintaining, and replacing its transportation infrastructure and municipal facilities.



Town of Simsbury

933 HOPMEADOW STREET P.O. BOX 495 SIMSBURY, CONNECTICUT 06070

BOARD OF SELECTMEN MEETING
AGENDA SUBMISSION FORM

1. Title of submission: Complete Streets Resolution
2. Date of submission: May 4, 2016
3. Date of Board Meeting: May 9, 2016
4. Individual or Entity making the submission:
Lisa L. Heavner, First Selectman and James Rabbitt, Director of Planning and Community Development
5. Action requested of the Board of Selectmen:
Requesting Board of Selectmen adopt the Complete Streets resolution attached to this submission.
6. Summary of Submission:
The resolution is for Board of Selectmen support of a complete streets approach to design, build, and use of town streets to further the health, safety, welfare, economic vitality, and environmental well-being of our town. "Complete Streets" are supported by the Institute of Transportation Engineers, the American Planning Association, US Conference of Mayors. The benefits of a "Complete Streets" policy include enhancement of mobility, improved safety, expanded transportation access/choice, and related contributions toward building a healthy community. A "Complete Streets" policy is also an important component of economic development by helping to create walkable and vibrant communities which attract and retain businesses and residents.
7. Financial Impact:
N/A
8. Description of documents included with submission (All documents must be in final form and signed by the appropriate party):
The following documents are included with this submission and attached hereto:
Draft resolution and letter from James Rabbitt, Director of Planning and Community Development

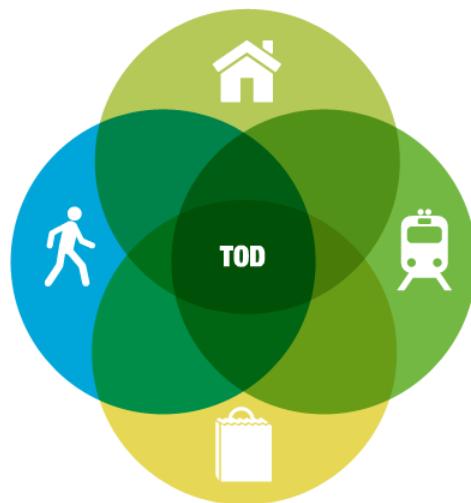
Rural Examples of Complete Street Implementation

Branchville Village, Ridgefield, CT



Branchville Village, Ridgefield

A Transit Oriented Development Project with a Complete Streets Approach



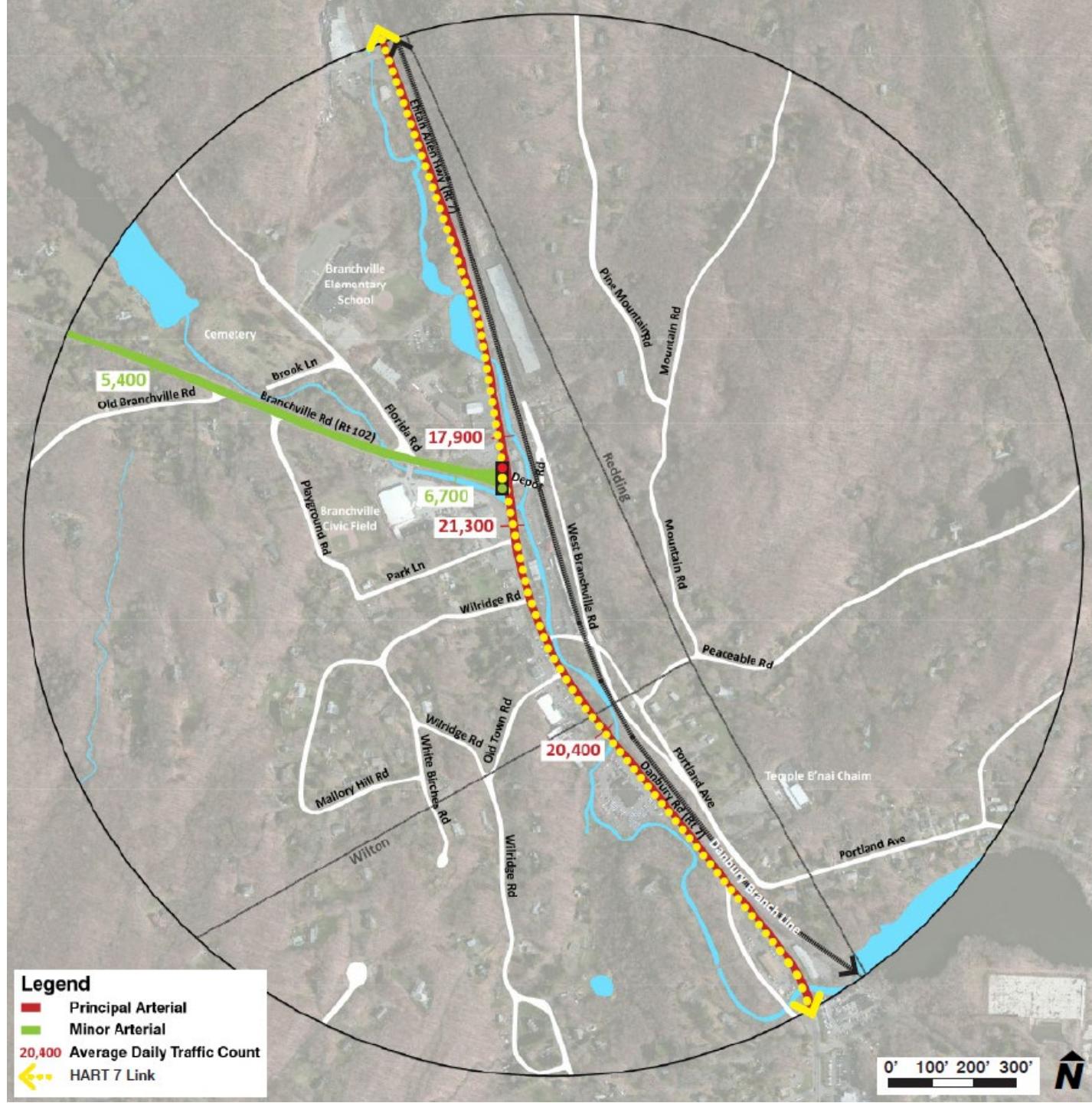
- Reduced household driving and thus lowered regional congestion, air pollution and greenhouse gas emissions
- Walkable communities that accommodate more healthy and active lifestyles
- Potential for added value created through increased and/or sustained property values where transit investments have occurred
- Improved access to jobs and economic opportunities
- Expanded mobility choices that reduce dependence on the automobile and transportation costs

The Vision for Branchville

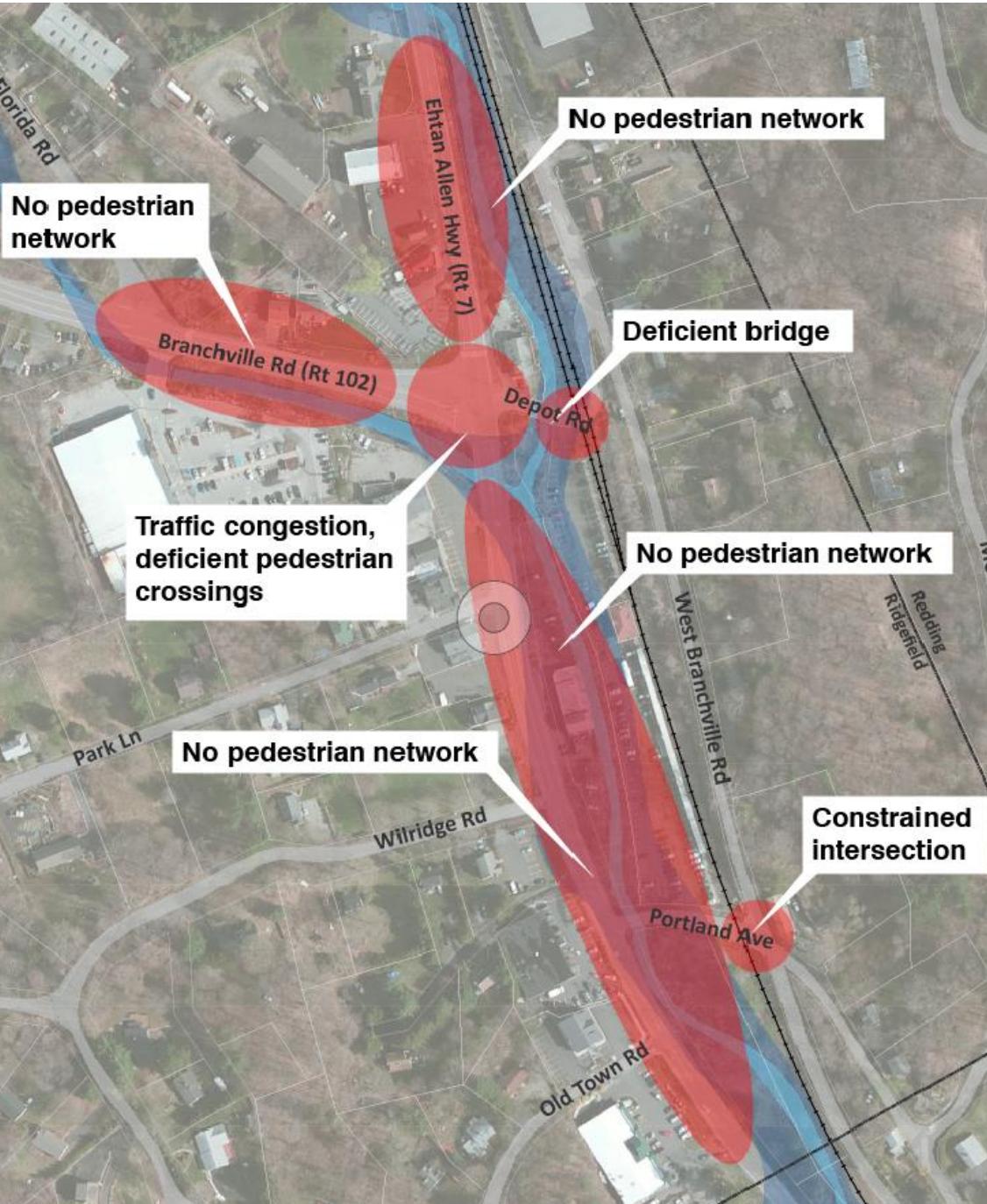
*In the future, Branchville will be a strong, cohesive mixed-use village. It will have outdoor public spaces, landscaping, and amenities that will be inviting to visitors and residents alike. Parking will be located so visitors can park once and walk throughout the village. Branchville will have **well-connected** small-scale developments with a mix of retail and housing. The **pedestrian environment** along and across Route 7 will be pleasant and safe. The train station will be well connected to the rest of the village where commuters live, shop, or dine.*

Transportation Network

- Branchville is traversed by Route 7 and Route 102
- High traffic volume on Route 7
- Transit includes Danbury Branchline of Metro North and HART 7 Link bus
- Sidewalks are limited



Transportation Network Deficiencies



Depot Road Bridge
Narrow bridge, lacks sidewalks and is insufficiently wide to carry traffic in both directions at the same time



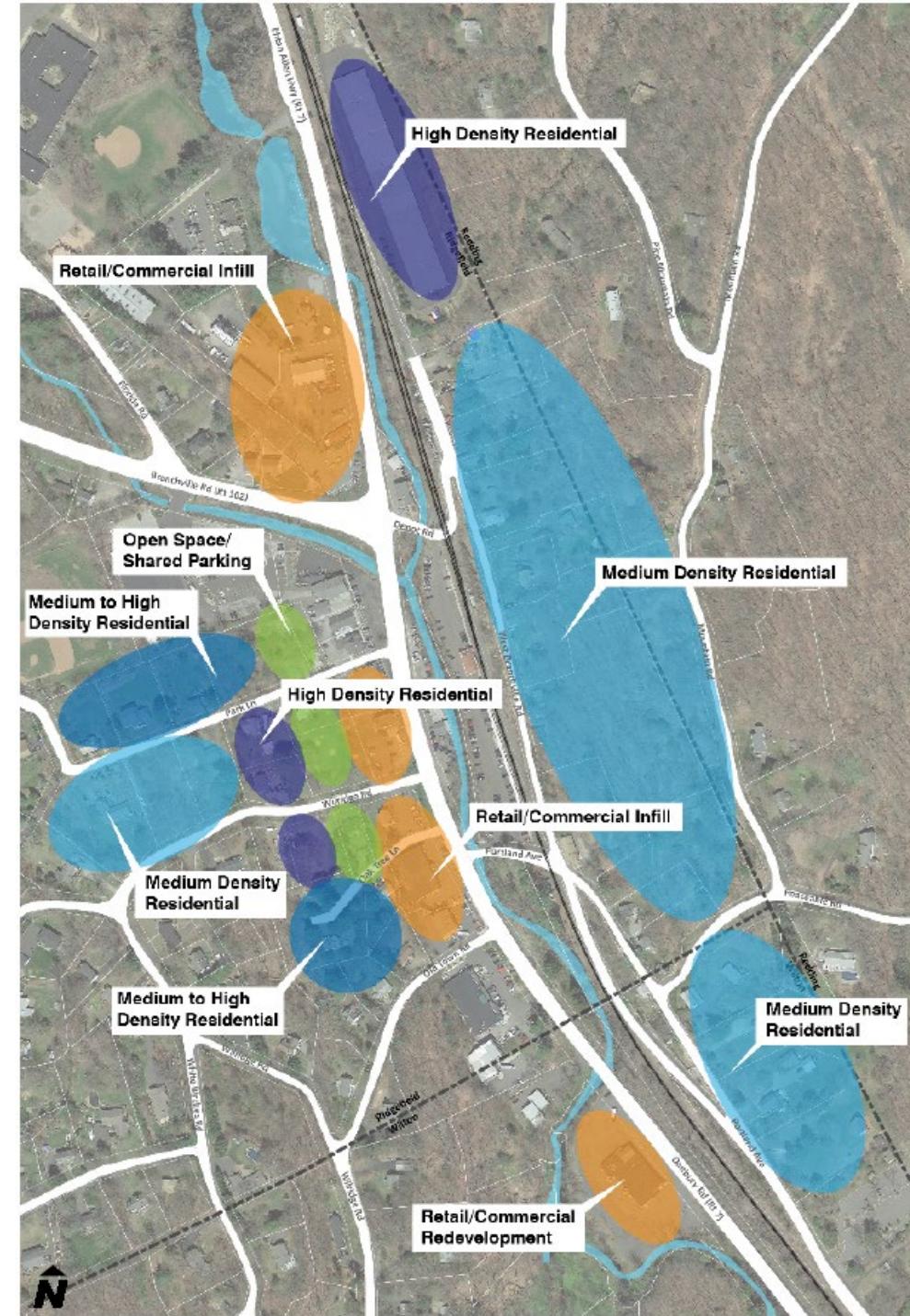
Sidewalk at Subway/My Cleaners
One of the few sidewalks in the Branchville study area



Crosswalk at Route 7 and 102

Development Strategy

- Medium and high-density residential development
- Infill commercial (retail/restaurant) development
- Public open space and shared parking



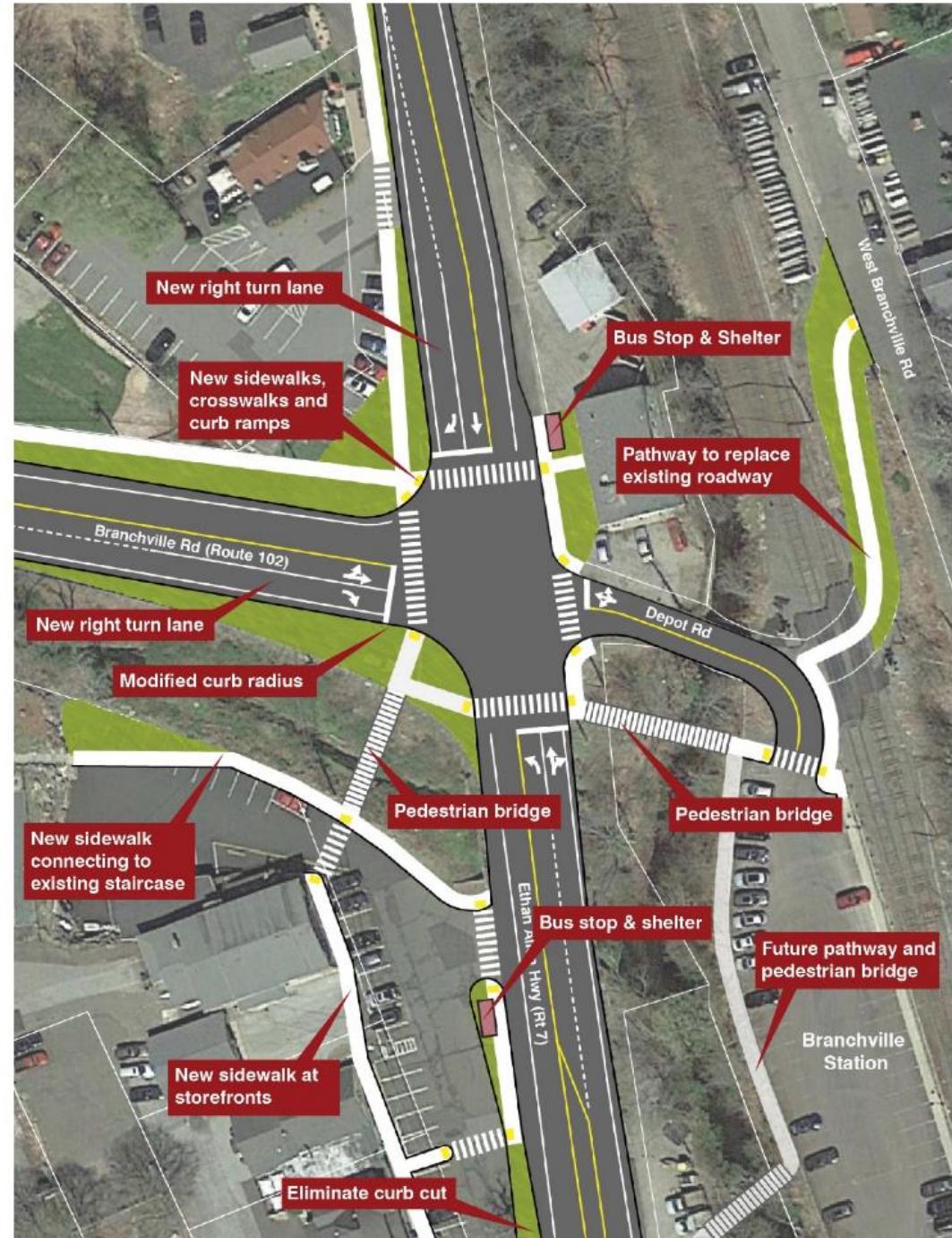
Residential Development



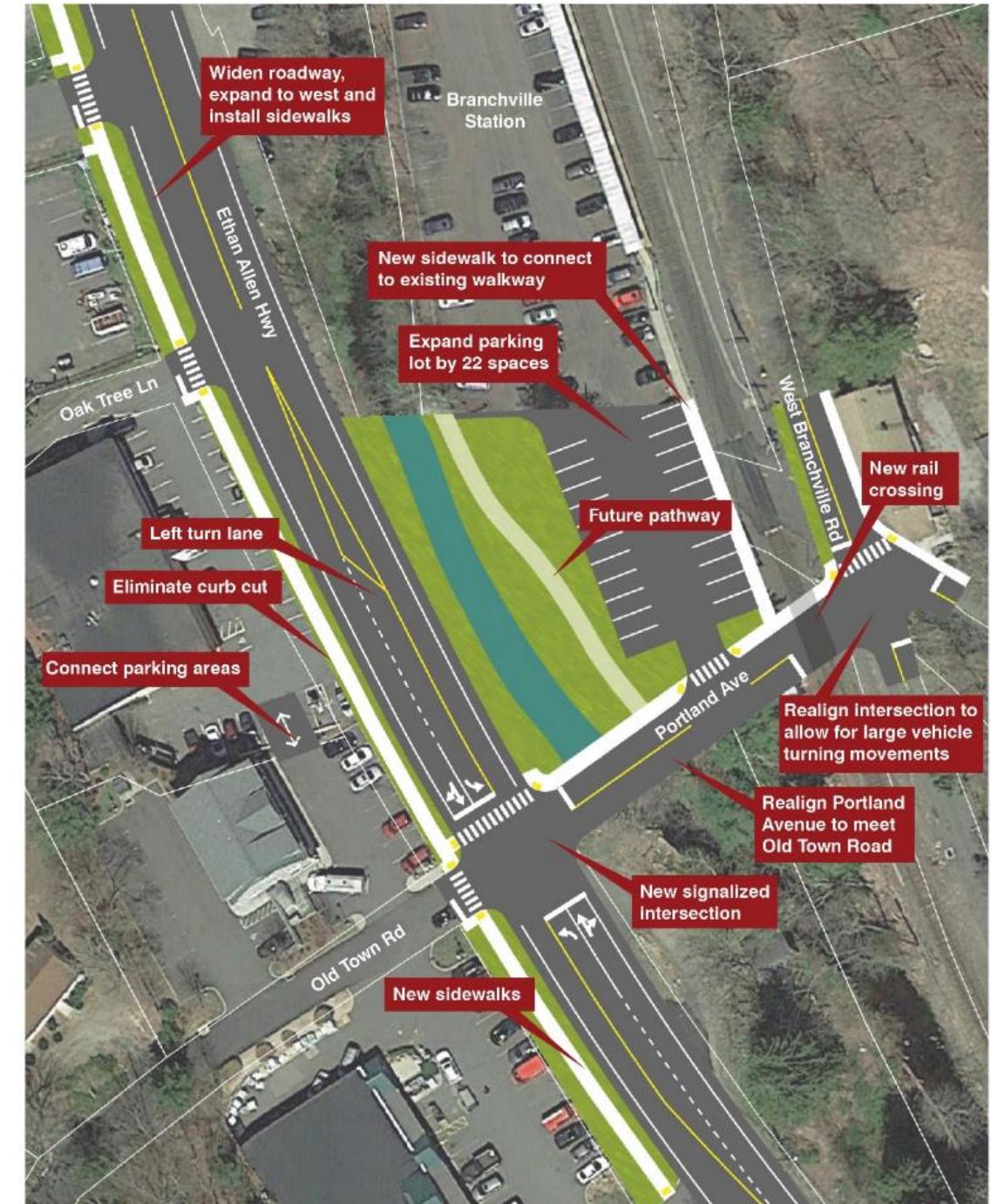
Commercial/Mixed Use Development



Route 102/7 Intersection Area Enhancements



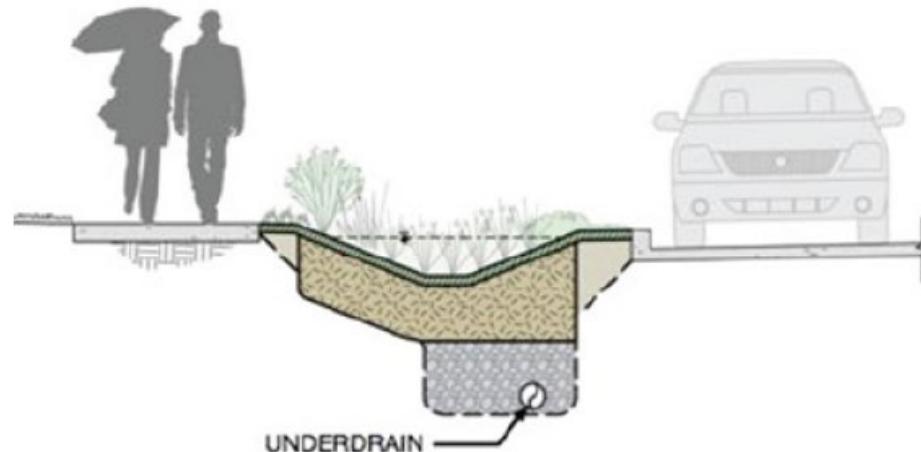
Portland Avenue Area Enhancements



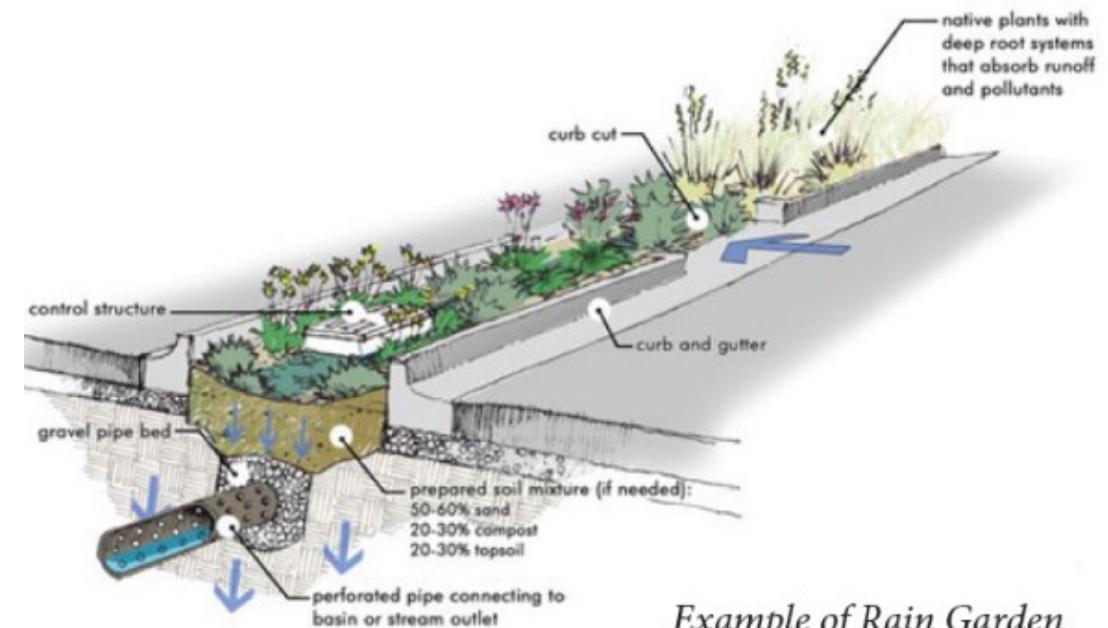
Stormwater Management Strategies

Stormwater runoff management measures should be used to reduce runoff. These include:

- Infiltration trenches
- Rain gardens
- Permeable pavements
- Detention basins



Example of Infiltration Trench (elevation view)



Example of Rain Garden

Route 7 Improvements - Before



Route 7 Improvements – After (rendering)



Village District Zoning

Purpose

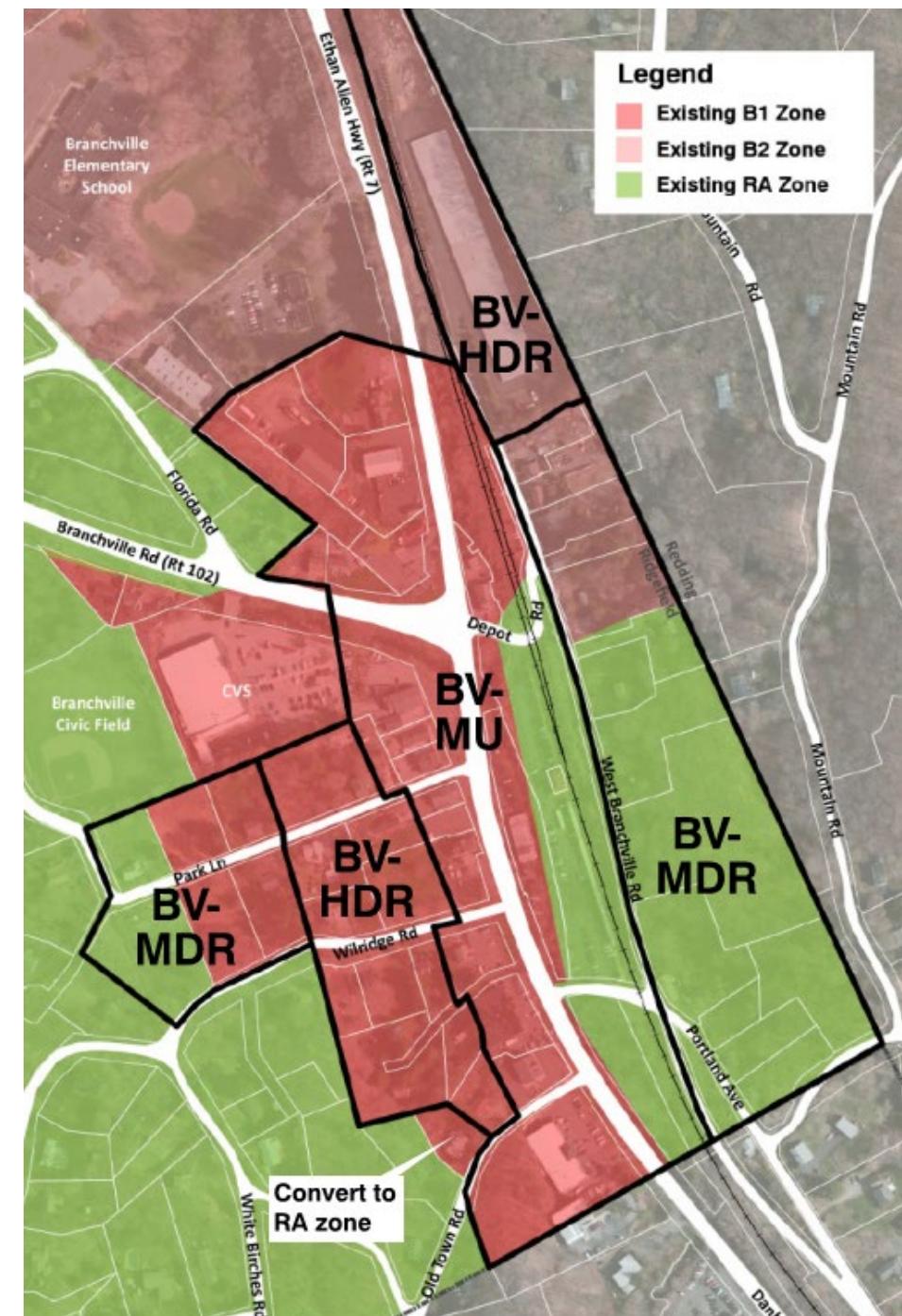
- To protect the distinctive character, landscape, and historic structures within the village district

What is regulated?

- New construction
- Substantial reconstruction
- Rehabilitation of properties within the district and within view from public roadways

Design Standards

- Design and Placement of buildings
- Maintenance of public views
- Design, paving materials and placement of public roadways**
- Other elements related to maintenance and protection of the character of the village district



Project Status

- \$6.5 million in funding acquired via the Federal Local Bridge Program and State Transportation Alternatives Program
- Pedestrian enhancements are now in engineering and design phase
- Construction is expected to begin in 2020

Give the green light: Plans for Branchville projects move along

Macklin K. Reid Published 1:20 pm EST, Thursday, November 9, 2017



Rural Examples of Complete Street Implementation

Brookfield Four Corners, Brookfield, CT



Four Corners, Brookfield

Four Corners Area

- The Four Corners area is traversed by Route 202 and Route 25
- Transit and sidewalks were limited



Four Corners Area



Four Corners Area

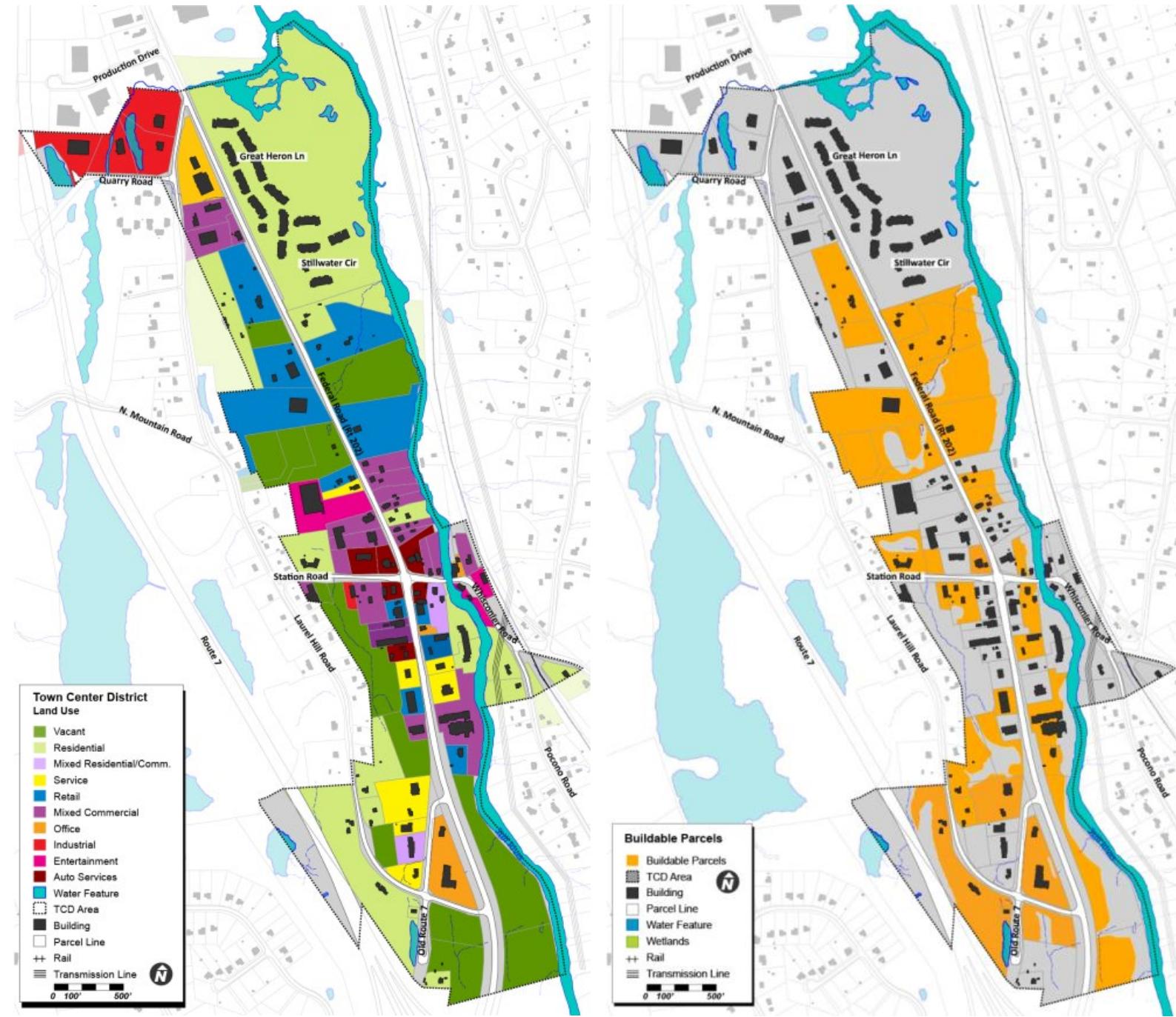


Guiding Principles of Plan

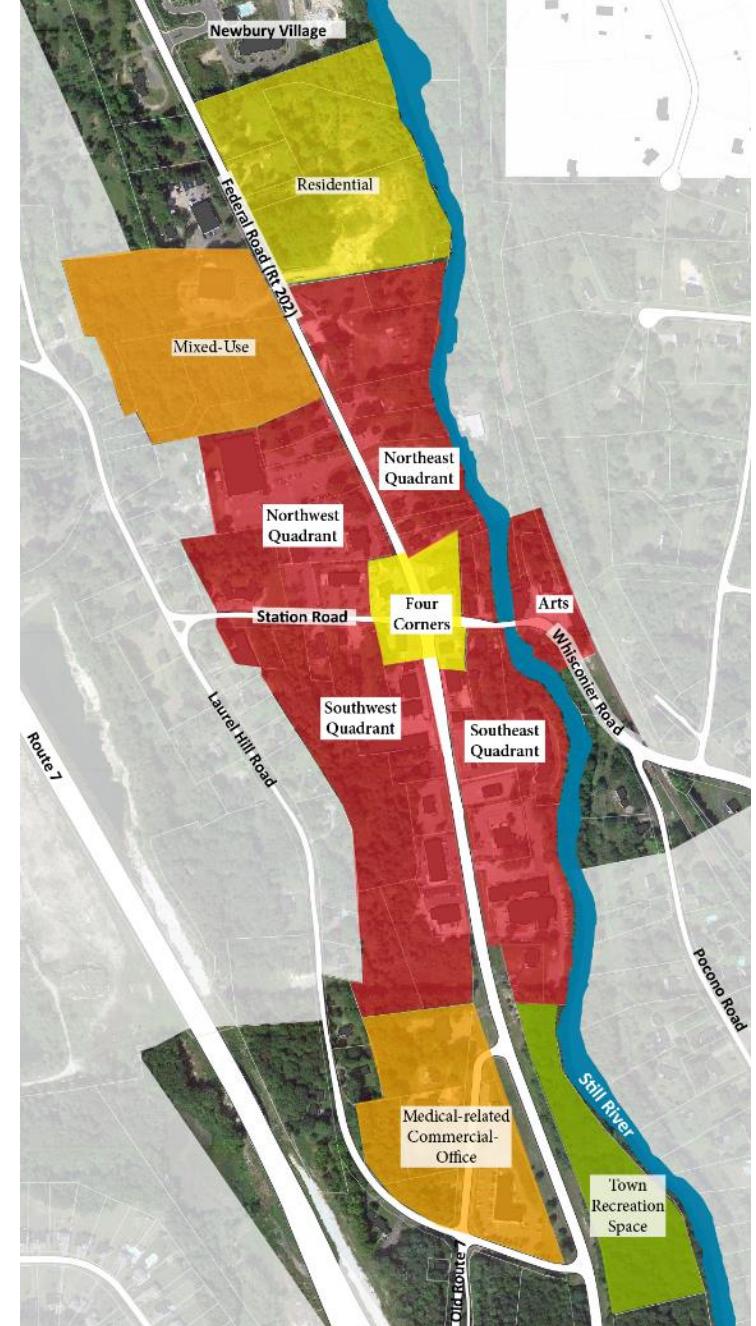
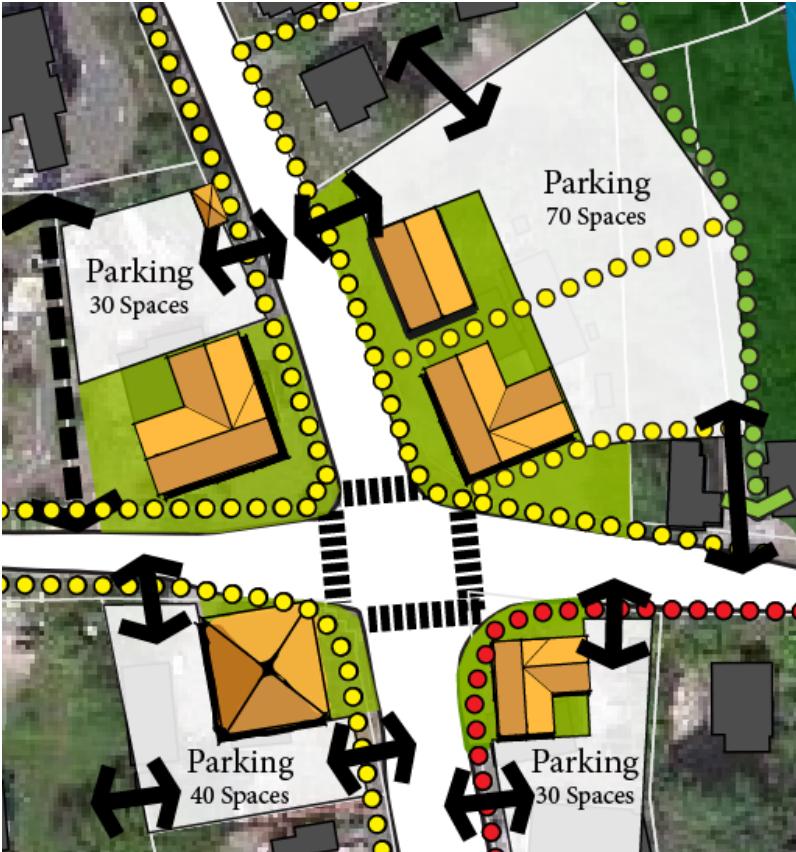
- Foster human interaction and a sense of neighborhood
- Provide unifying architectural themes among buildings in terms of scale and visual setting
- **Offer a walkable, well-connected, pedestrian scale environment**
- Conserve valued natural and community resources, such as the Still River and historic buildings
- **Create a balance and offer connectivity among means of travel** including by automobile, transit, and on bicycle or on foot; offers
- **Provide many ways to travel among destinations.** This plan accommodates the addition of commuter rail should the CT DOT extend service.
- **Provide streets which function as public spaces** in the mix of human activity, along with being travel ways
- Provide a diverse economic environment that serves the needs of both residents and visitors, while being nimble and adaptable to change in the global economic climate over time
- Be sustainable; provide a persistent high quality of environmental and community resources over the long-term future for Brookfield residents, businesses, and visitors

Four Corners Land Use

- Land use is mixed and includes residential, retail, office, industrial, auto services, mixed-use, and vacant land.



Four Corners Development Concept

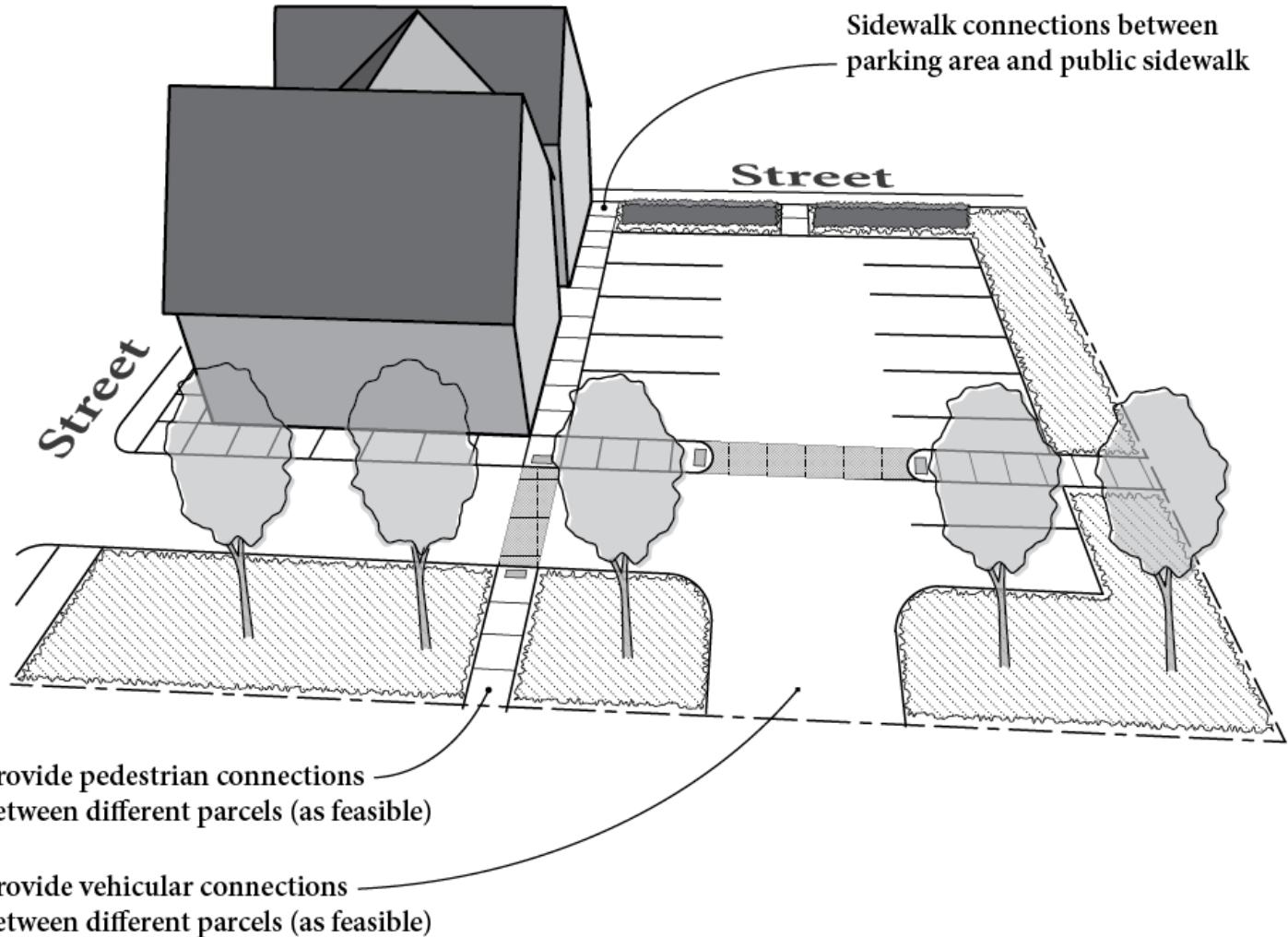


Four Corners Complete Streets Improvements



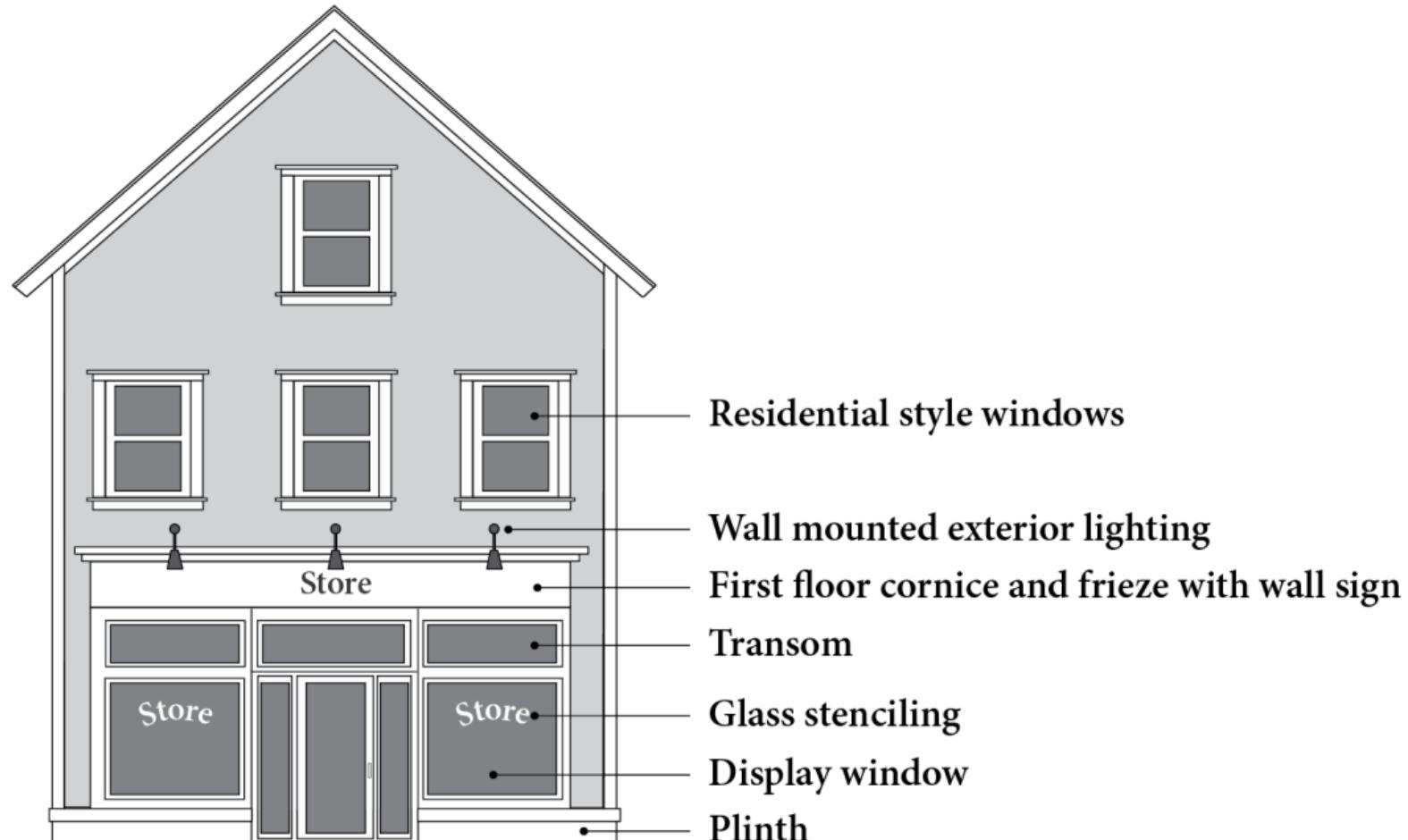
Complete Streets Friendly Zoning

- Zoning was used to ensure active street edges by requiring buildings to front streets and placing parking to the rear and sides.
- Pedestrian connections are required throughout developments



Complete Streets Friendly Zoning

- Architectural design guidelines were used to ensure that buildings and storefronts contribute to the safety and comfort of the street



Complete Streets Friendly Zoning

- Bicycle accommodations such as bike parking are an important aspect of Complete Streets
- Bike parking can be required by zoning

4.6 Bicycle Parking

Bicycle access and activity is considered an important ingredient of a dynamic town or village center. Site design should facilitate bicyclist access and connectivity for bicycle travel among parcels.

- Bicycle racks should be located along a major building approach line and clearly visible from the approach.
- The bike rack area should be no more than 100 feet from the entrance it serves and should preferably be within 50 feet.
- “Inverted U” style bicycle racks or variants thereof are preferred over “wave” or “comb” style racks (see figure 4).
- Bicycle racks should be of architectural character to compliment that of the buildings and other site features such as lighting and pedestrian amenities.
- There shall be one (1) secured bicycle parking space per dwelling unit. There shall be one (1) secured bicycle parking space per 3,000 sq. ft. of commercial space or 10% of the number of automobile spaces (whichever is greater).
- Residential bicycle parking should be located indoors or sheltered if feasible so as to prevent damage to bicycles parked for long periods of time (see figure 5).



Figure 4: “Inverted U” style bike rack



Figure 5: Example of secure indoor bicycle parking

Four Corners: From Conceptual Planning and Zoning to Implementation

Four Corner streetscape design coming

Nanci G. Hutson

Updated 10:26 pm, Tuesday, October 8, 2013

BROOKFIELD -- The Four Corners village is quickly becoming a desirable economic opportunity for developers, with three major projects approved and more on the way.

To ensure that the downtown, pedestrian-friendly destination concept becomes a reality, First Selectman Bill Davidson informed his fellow selectmen that he will sign a contract this week with URS Corp. to design and engineer a streetscape with sidewalks, lighting, benches and curb cuts.

The streetscape plan will then become part of future land-use requirements for the residential and commercial development to be located in what is to be a "walkable village."

The \$105,000 design cost is being paid through a state economic development grant. As for the construction of the streetscape, Davidson said he anticipates the town will seek more grant funding to be a public partner with some of the developers.

In addition, Davidson noted that the Zoning Commission is working on regulations to establish a common, New England theme for the Four Corners. He said the company that designed the Four Corner concept, Fitzgerald & Halliday, would be hired to develop some of those specific guidelines. Again, the cost, about \$20,000, would be paid through a state economic development grant, Davidson said.

Four Corners Streetscape Project Referendum Set for Tuesday: Brookfield Voter's Guide

Residents will be deciding whether to borrow the funds for the first phase of the project Tuesday. Here is what you need to know.

By Joe Lipovich, Patch Staff
Feb 6, 2017 11:04 am ET | Updated Feb 6, 2017 1:10 pm ET

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Four Corners: From Conceptual Planning and Zoning to Implementation



An aerial photograph of a four-way intersection in a suburban area. The roads are labeled: S Main St, W Main St, Federal Rd, and W Maincomer Rd. The intersection is a complex four-way junction with multiple traffic lights and crosswalks. There are several buildings, including a large church with a parking lot, a school or office building, and smaller houses. A park with a playground is visible on the left side. The surrounding area is a mix of developed land and green fields. The image is taken from a high vantage point, providing a comprehensive view of the intersection and its surroundings.

Four Corners
2014



An aerial photograph of a four-way intersection in a suburban area. The roads are labeled: Staten Rd (top left), 202 (center), Federal Rd (bottom center), and Wiscomeer Rd (right). The intersection features a large parking lot for a shopping center, several buildings, and surrounding residential and commercial properties. The image is oriented vertically, with the top pointing towards the left.

Four Corners 2018

An aerial photograph of the Four Corners area in New Bedford, Massachusetts, during the winter. The image shows a mix of residential and commercial buildings. In the foreground, there's a large complex of green townhouses under construction, with several white vans parked nearby. To the right, a two-story building with a red roof and white trim stands next to a gas station. Further back, a row of houses with solar panels on their roofs is visible. A major road cuts through the scene, with a yellow double line marking the center. The surrounding area is filled with bare trees and some patches of snow.

Four Corners
2019

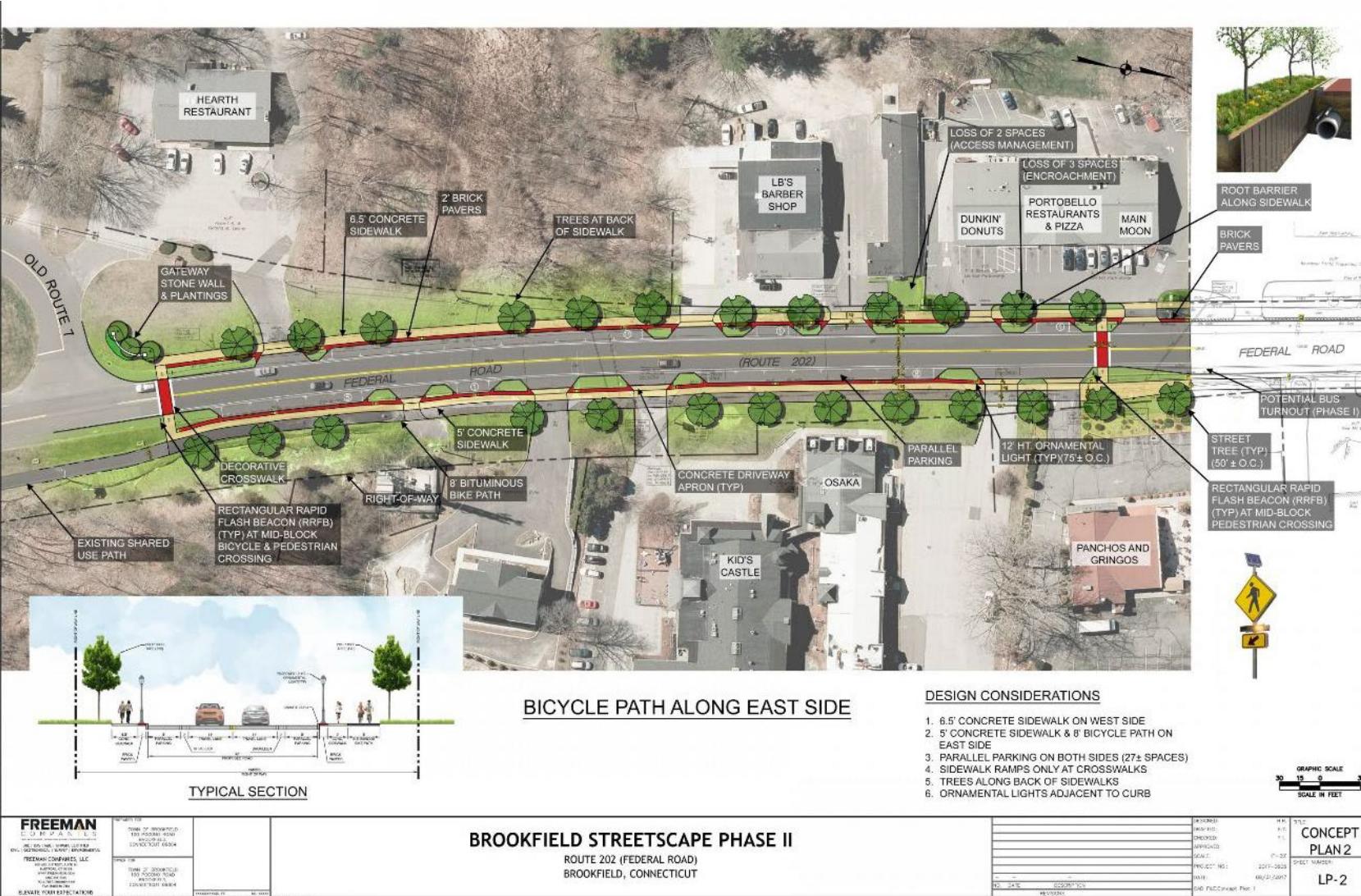


Brookfield's
new streetscape



Safety enhancements

The Project Continues



QUESTIONS?

Thank you!

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APPENDIX



Sources

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Considerations

- Look at Level of Service as a *guideline, not a floor.*
- Many streets in the past were overbuilt and remain so. These streets *may* have extra capacity.
- Consider congestion levels *throughout the day*, not only at the peak hour.
- *Interconnected, dense street networks perform relatively more efficiently than suburban-style networks.*