Pemberton Township

Complete Streets Policy & Plan

February 2016

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

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Acknowledgements

Project Technical Advisory Committee:

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Mr. Steven Borders, Planning Board Chair, Pemberton Township
Mr. Timothy Haines, Zoning Board Chair, Pemberton Township
Mr. Thomas Besselman, Environmental Commission, Pemberton Township
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DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

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Chapter 1

Introduction

What are Complete Streets?

Complete Streets are streets designed for all users, all modes, and all ability levels, balancing the needs of drivers, pedestrians, bicyclists, transit vehicles, emergency responders, and goods movement based on the roadway context. Complete Streets provide "access to opportunities" and improve transportation safety and efficiency for individuals without a car, enabling access to employment, education, healthy foods, and affordable housing by bicycle, on foot, or by transit.

Benefits of Complete Streets

- Mobility for all users
- Safety
- Equity for non-drivers
- Health
- Quality of life
- Economic vitality
- Environmental benefits

Purpose of the Policy & Plan

A Complete Streets *policy* formalizes a community's intent to plan, design, operate, and maintain streets that are safe for all users of all ages and abilities. A Complete Streets *plan* provides the framework to assess the current street network and practices, assign responsibility, and set priorities, performance targets, and action items. This policy and plan, together as presented in a single document, are a tool for the community to communicate its work with community leaders, residents, and other agencies including the county and the state.

Ultimately, the purpose of this *Pemberton Complete Streets Policy & Plan* is to provide the stategic foundation to guide changes that will be made to the design, construction, operation, and maintainance of roadways throughout Pemberton Township, making them safe and accessible for all travelers.

Intent and Use of the Plan

The Complete Streets policy provides a framework to guide municipal and county decisions on improvements to roadways within Pemberton Township. This policy also provides direction to public officials in establishing Township-wide Complete Street priorities, performance targets, and specific action items to ensure timely progress on implementing Complete Streets.

The Complete Streets plan contains a multimodal street typology and design guidelines that complement the Complete Streets Policy through a unified set of design guidelines. These guidelines provide best practices to ensure routine accommodation of all travel modes throughout the wide range of Township and County activities that influence street design, maintenance, and resurfacing.

Process and Public Outreach Summary

This study has relied on representative public engagement to develop and promote a better understanding of how street design can foster a positive impact on the quality of life in the neighborhoods of Pemberton Township. Outreach efforts included stakeholder interviews, presentations to community groups, and distribution of materials through municipal officials and the project Technical Advisory Committee. Project status updates and draft products, including the detailed street typology, were reviewed with the project Technical Advisory Committee. Requested refinements are incorporated into this final report.

Chapter 2

Complete Streets

Complete Streets Defined

This section provides a definition and overview of Complete Streets in the context of Pemberton Township through the framework provided in the *New Jersey Pedestrian Safety Action Plan Toolbox* (NJDOT, November 2013).

As defined in the *Toolbox*, "Complete Streets are designed for everyone – all users, modes, and ability levels – balancing the needs of drivers, pedestrians, bicyclists, transit vehicles, emergency responders, and goods movement."

Municipal Complete Streets policies and plans in New Jersey support and advance the goals of the *New Jersey Pedestrian Safety Action Plan* through the planning, design, construction, operation, and maintenance of safe multimodal streets, designed to accommodate all roadway users and fit the local context. As Pemberton Township applies Complete Streets as a core, guiding principle, a robust, multimodal network with facilities for all users can be implemented over time, thereby meeting both state and municipal goals for mobility.

Complete Streets Principles and Approach

Complete Streets is an approach to planning and design that ensures that roadways are planned, designed, constructed, maintained, and operated for all users of all abilities -- not just motor vehicles. This includes pedestrians, bicyclists, motor vehicle drivers, emergency vehicles, public transportation riders and operators, and commercial goods/freight drivers. The Complete Streets approach is an inherent component of the *Pemberton Township Complete Streets Policy & Plan.*

The Complete Streets paradigm can be understood in two distinct senses: policy and the built environment. A policy defines and elucidates a course of action, goals, and procedures. The built environment is subject to physical modification through the implementation and execution of the Complete Streets policy in the planning, design, construction, maintenance, and operations of roadways. Complete Streets considerations that are associated with policy include the formal Complete Streets policy, codes or ordinances, land use and zoning, and master plan/planning studies. Complete Streets considerations that are associated with the built

environment include maintenance and access management, intersection treatments and traffic signals, corridor segments, and parking management.

Complete Streets Policy

A Complete Streets policy is a formal endorsement of Complete Streets principles, practices, and procedures that influence the planning, design, construction, maintenance, and operation of new, retrofitted, or reconstructed roadways. The establishment of a formal policy is a necessary step to ensure that Complete Streets are present in Pemberton Township's roadway environment.

Included on the following two pages is a draft resolution for the adoption of a Complete Streets policy by Pemberton Township. This draft resolution is based on the New Jersey Department of Transportation's Complete Streets Policy, which is considered by the National Complete Streets Coalition to be the strongest among state policies.

The resolution identifies local values associated with Complete Streets and provides organizational direction. The resolution identifies updates, as necessary, to the procedures, standards, processes, and performance measures that govern the planning, design, construction, maintenance, and operation of new, retrofitted, or reconstructed roadways. It expresses the intention to create an integrated network of multimodal connections among trip generators in Pemberton Township, recognizing the need and increasing the likelihood that more will be done in the future.

The resolution also identifies the criteria for Complete Streets projects to be undertaken by the Township and provides limitations to projects of limited serviceability or detrimental cost or environmental impacts.

TOWNSHIP OF PEMBERTON
RESOLUTION NO. ##-2016

A RESOLUTION ESTABLISHING AND ADOPTING
A COMPLETE STREETS POLICY
FOR THE TOWNSHIP OF PEMBERTON

WHEREAS, the Township of Pemberton is committed to creating a comprehensive, integrated, multi-modal transportation network with infrastructure, design, maintenance, and operations that provides safe and convenient travel along and across streets for all travelers, including pedestrians, bicyclists, motor vehicle drivers, emergency vehicles, public transportation riders and drivers, commercial goods drivers, inclusive of people of all ages and abilities; and

WHEREAS, the New Jersey Department of Transportation's Complete Streets policy states "A Complete Street is defined as a means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options"; and

WHEREAS, Complete Streets improve safety for pedestrians, bicyclists, children, older citizens, people with disabilities, non-drivers, transit riders, and those who cannot afford a car or choose to live car-free; and

WHEREAS, Complete Streets provide an integrated network of connections among trip generators such as employment, education, residential, recreation, retail centers, public facilities, parks, and open space that can be accessed via multiple modes of travel; and

WHEREAS, complete streets have the potential for improving physical and mental health either directly or indirectly in the following ways:

1. Incorporating physical activity into our daily lives by increasing pedestrian activity and bicycle use;
2. Reducing rates of several chronic diseases related to increases in physical activity from walking and bicycling. Key impacted diseases include diabetes, heart disease, depression, and some cancers;
3. Reducing rates of injury and death from decreased traffic crashes and improved road safety for all users;
4. Reducing rates of asthma and other respiratory issues due to improved air quality through emissions reductions and vegetative air filtration;
5. Multiplying health and wellness benefits resulting from improved access to necessary amenities for vulnerable populations;
6. Reducing the risk of illnesses related to water-borne pathogens resulting from improved stormwater infiltration;
7. Increasing the sense of social connectivity and sense of community belonging;
8. Improving aesthetics through decorative and functional vegetation; and

WHEREAS, Complete Streets relieve traffic congestion and reliance on carbon fuels thereby reducing greenhouse gas emissions; and

WHEREAS, the Mayor and Council of the Township of Pemberton support a comprehensive, integrated, multi-modal transportation network that provides safe and convenient accommodation for all road users of all ages and abilities throughout the Township;

NOW, THEREFORE, BE IT RESOLVED that the Mayor and Council of the Township of Pemberton hereby establish and adopt the Pemberton Complete Streets Policy.

BE IT FURTHER RESOLVED that the Township of Pemberton shall create a comprehensive, integrated, multi-modal transportation network by systematically identifying and including appropriate multimodal transportation features in all new construction, reconstruction, and resurfacing projects that provide access to or are in the vicinity of bicycling and walking trip generators such as employment, education, residential, recreation, retail centers, public facilities, parks, and open space.

BE IT FURTHER RESOLVED that all public street projects characterized as new construction, reconstruction, or retrofit undertaken by the Township of Pemberton shall be planned, designed, constructed, maintained, and operated as Complete Streets and that the Township of Pemberton shall request the same of all public street projects, characterized as new construction, reconstruction, or retrofit undertaken by Burlington County or other entities within the Township of Pemberton unless one of the following conditions are met:

1. Scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for such accommodations;
2. Detrimental or environmental or social impacts outweigh the need for these accommodations;
3. The cost of the accommodation is excessively disproportionate to the cost of the project, more than ten percent (10%) of total cost.
4. The inclusion of Complete Streets results in compromising, the safety, or timing of the project.

BE IT FURTHER RESOLVED that the Department of Community Development shall provide design guidelines for Complete Streets implementation organized by roadway functional classification to identify and establish design standard for Complete Streets that are relevant and appropriate within the Township of Pemberton.

BE IT FURTHER RESOLVED that the Department of Community Development shall provide information and educational resources to Township of Pemberton departments, professionals, boards, and elected officials to enhance understanding and implementation of Complete Streets concepts as part of design and plan review.

BE IT FURTHER RESOLVED that the Township of Pemberton municipal departments and professionals, such as Community Development, Engineering, Planning, Zoning, and Public Works shall review and either revise or develop proposed revisions to all appropriate plans, codes, ordinances, procedures, rules, regulations, and evaluation standards including updates to the *Pemberton Township Master Plan,* to recognize, integrate, accommodate, and balance the needs of all road users in all projects and make Complete Streets a routine part of everyday operations.

PEMBERTON TOWNSHIP COUNCIL

ATTEST:

I hereby certify that the foregoing resolution was adopted by the Township Council of Pemberton Township on _____.

Amy P. Cosnoski, RMC, Township Clerk

Additional Complete Streets Policy Considerations

In addition to the formal policy as provided above, Pemberton Township is in the position to consider and implement general policy changes that honor the spirit of Complete Streets principles. Such policy changes may apply to local codes and ordinances, land use and zoning, or master plans and planning studies. A listing of policy considerations is provided below.

Codes and Ordinances

Pemberton Township can adopt codes and ordinances to establish pedestrian and bicycle responsibilities. Actions to consider include:

- Formally assign pedestrian and bicycle accommodations within the purview of appropriate department (e.g. engineering or planning). Assign staff to address pedestrian and bicycle issues.
- Create a Complete Streets advisory group to advise staff and agencies (e.g. planning board, zoning board) on projects and programs to address pedestrian and bicycle needs.
- List "active transportation" as an element of the comprehensive health program to be developed and implemented by the department of health or other similar unit.
- Provide training and information on bicycle and pedestrian laws and operations to the public and staff.
- Establish a police on bikes unit.
- Don't include mandatory (or remove provisions that mandate) bicycle licensing or registration requirements.
- Don't implement (or remove provisions that implement) bike bans (e.g. restrictions on biking to school).
- Adopt a bicycle parking ordinance that requires bicycle parking as part of new development and redevelopment, within public parking lots and garages, and at key commercial or commuter locations.
- Prohibit bicycle parking on sidewalks, sidewalk areas, and bicycle travel facilities.
- Seek status as a Bicycle Friendly Community from the League of American Bicyclists (www.bikeleague.org).
- Seek status as a Walk Friendly Community from the Walk Friendly Communities national recognition program (www.walkfriendly.org).

Land Use and Zoning

Pemberton Township can integrate Complete Streets principles into land use decisions. Actions to consider include:

- Establish and inform developers of requirements for bicycle and pedestrian access and safety and what is to be included in site development and subdivision plans.
- Encourage mixed use development.
- Provide options for pedestrian and bicycle-friendly streetscapes and roadway design requirements.
- Incentivize bicycle and pedestrian amenities in exchange for increased floor area ratio, additional square footage, and reduced parking requirements.
- In shopping centers, offer incentives for architectural treatments that protect pedestrians from the elements, such as canopies or arcades.

- Require applicants to complete missing sidewalks as a condition for site plan and zoning approvals.

Master Plans and Planning Studies

Pemberton Township can include bicycle and pedestrian access and safety in all planning activities, including the master plan updates, redevelopment plans, and the transportation element. These plans should:

- Identify existing and proposed elements of the bicycle and pedestrian network.
- Inventory problem locations and gaps in network.
- Identify crash locations involving pedestrians and bicyclists.
- Include specific recommendations for pedestrian and bicycle facilities.
- Incorporate or refer to standards, specifications, and design guidelines.
- Identify funding responsibility for proposed improvements.
- Encourage the linking of residential development and commercial areas or other residential areas, even when no roadway linkages are present, by means of segments of shared use paths.
- Consider traffic calming elements such as landscaping, street trees, and narrowing of lanes where safe and appropriate.
- Lower speed limits, which may require implementation of traffic calming devices, such as speed humps or signs and striping. Speed humps are an example of *active* traffic calming devices. Signs and striping are an example of *passive* traffic calming devices.

Chapter 3

Multimodal Complete Street Typology

Introduction

Some jurisdictions go beyond roadway classification to categorize streets into broader "typologies" that account for non-motorized road users (pedestrians, bicyclists, and transit) as well as land use context and environmental factors. Such typologies complement the Complete Streets paradigm as they allow for a more comprehensive understanding of a street's existing and desired functions. Typologies should be considered as part of a comprehensive evaluation of what design treatments might be appropriate for a given street. The typologies are intended to:

1. Create Complete Streets that address all modes of travel, including pedestrian traffic, bicycle traffic, transit, and motor vehicular traffic.
2. Address all features of the right-of-way, including sidewalks, buffer areas, parking lanes, traffic lanes, bicycle lanes, and medians.
3. Create streets that are appropriate for their contexts in residential, commercial, or rural districts and are designed to encourage travel at appropriate volumes and speeds.
4. Fit within the area types to ensure that they meet the criteria of safety, feasibility, and proper application.
5. Maintain local standards/codes and state and federal functional classifications.

Applicability

The Multimodal Complete Street Typology applies to all vehicular rights-of-way. A review of the Township's existing functional classification determined how roads need to be treated to handle the traffic volumes and other conflicts that may arise as a result of design changes, and help understand how this is tied to funding. The Street Typology Matrix, shown on the following page, summarizes the multimodal classification scheme and its role within the local transportation system.

If this Multimodal Complete Street Typology is adopted within the Circulation Element of the Pemberton Township Master Plan and is linked to specific roadways in the circulation system, then the requirements of the Master Plan superseed the requirements of Residential Site Improvement Standards.

Street Typology Matrix

FUNCTIONAL CLASS	COROLLARY TYPOLOGY	COMPLEMENTARY LAND USE TRANSECT*	TARGET SPEED	TRAVEL LANE WIDTH	BIKE TREATMENT	PEDESTRIAN TREATMENT	ON-STREET PARKING
Primary Arterial	Commercial / Rural Highway	Suburban retail along commercial linear corridor	45 – 50 mph	11' – 12'	Wide shoulder (minimum of 5')	Shared shoulder, or multi-use trail, or greenway pending R.O.W.	None or limited
Minor Arterial	Rural Township Connector	Rural area, transitions to village and suburban areas	35 – 45 mph	10' – 12'	Wide shoulder or bike lane (minimum of 5')	Sidewalk (minimum of 5'), multi-use trail or greenway	None or limited
Minor Arterial	Suburban Township Street	Village or town edge retail; transitions to rural area	30 – 40 mph	10' – 11'	Wide shoulder or bike lane (minimum of 5')	Sidewalk (minimum of 5')	Permitted
Collector	Residential Street	Traditional neighborhood	20 – 35 mph	10' – 11'	Bike lane (minimum of 5'), or shared lane markings	Sidewalk (minimum of 5')	Permitted
Sub-Collector	Residential Road	Rural neighborhood	20 – 30 mph	10' – 11'	Shared use or lane markings	Sidewalk (minimum of 5')	Permitted
Sub-Collector / Local	Village Main Street	Village center	20 - 30 mph	10' – 11'	Shared use or lane markings	Sidewalk (minimum of 5')	Permitted
Local / Other	Alley / Access Road	Village center or town edge; neighborhood	15 – 25 mph	10'	Shared use or lane markings	Sidewalk (minimum of 5')	Permitted

*Based on and building from land use transect as included in the Smart Code by Duany Plater-Zyberk & Co. with consideration of Pemberton Land Use Master Plan and Browns Mills Town Center Plan.

Commercial/ Rural Highway

LAND USE	
Complementary Land Use Transect**	Suburban retail along commercial linear corridor
Complementary Land Use Character	• Large scale retail, office complexes, lifestyle centers, plazas, and light industrial (R&D) uses • Large parcels of 1 acre or more • Structures generally 1-2 stories in height
MOTOR VEHICLE REALM	
Functional Class	Primary arterial
Typical Pavement Width Range	32’ - 36’
Typical Right-of-Way Range	42’ - 52’
Target Speed	45 – 50 mph
Travel Lane Width	11’ – 12’
On-Street Parking	None or limited
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	Wide shoulders (minimum of 5’)
Pedestrian Treatment	Shared shoulders, or multi-use trail or greenway pending right-of-way

***Based on and building from land use transect as included in the “Smart Code” by Duany Plater-Zyberk & Co. with consideration of “Pemberton Land Use Master Plan” and “Browns Mills Town Center Plan”.*

Figure 1: *Street Requirements Table*

Figure 2: *Existing street example - County Road 530, east of County Road 616*

Figure 3: *Existing street example - State Route70, west of County Road 530*

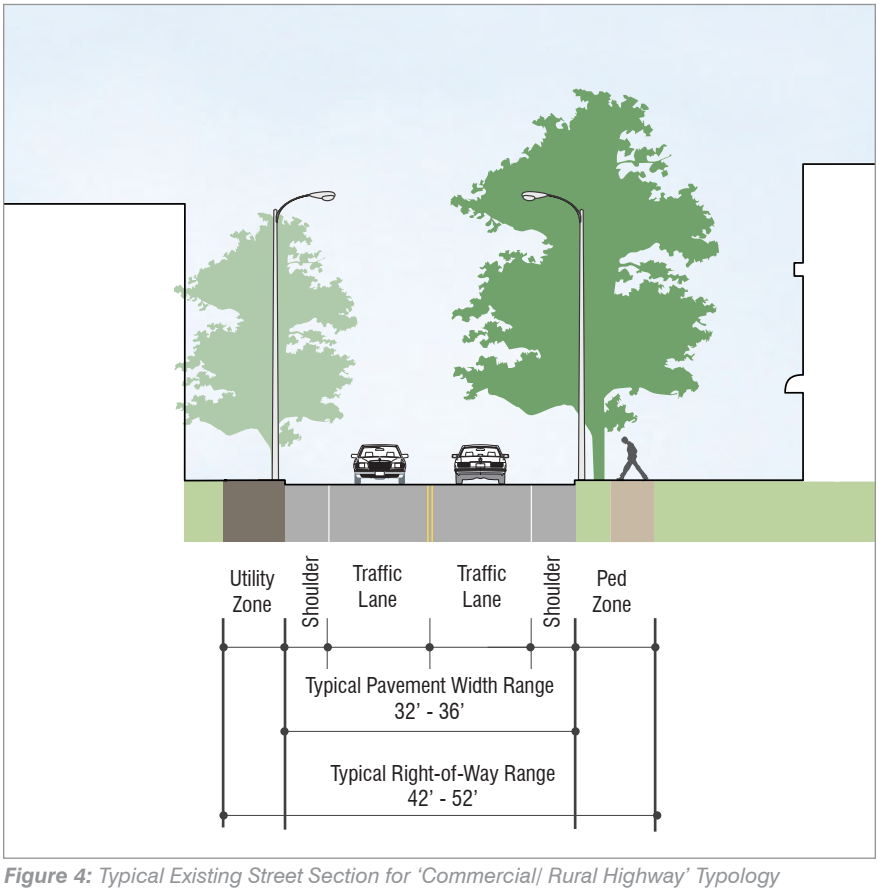

Figure 4: *Typical Existing Street Section for ‘Commercial/ Rural Highway’ Typology*

Rural Township Connector

LAND USE	
Complementary Land Use Transect**	Rural area, transitions to village and suburban areas
Complementary Land Use Character	• Agricultural, forest and park areas • Low density single family homes and light industrial (R&D) uses • Large parcels of 1 acre or more
MOTOR VEHICLE REALM	
Functional Class	Minor arterial
Typical Pavement Width Range	30’ - 34’
Typical Right-of-Way Range	40’ - 52’
Target Speed	35 – 45 mph
Travel Lane Width	10’ – 12’
On-Street Parking	None or limited
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	• Alternative A: wide shoulder (minimum of 5’) • Alternative B: bike lanes (minimum of 5’)
Pedestrian Treatment	Shared shoulders, or multi-use trail or greenway pending right-of-way

***Based on and building from land use transect as included in the “Smart Code” by Duany Plater-Zyberk & Co. with consideration of “Pemberton Land Use Master Plan” and “Browns Mills Town Center Plan”.*

Figure 5: *Street Requirements Table*

Figure 6: *Existing street example - County Road 616, southwest of County Road 669*

Figure 7: *Existing street example - 4-Mile Road, southeast of Rake Pond Road*

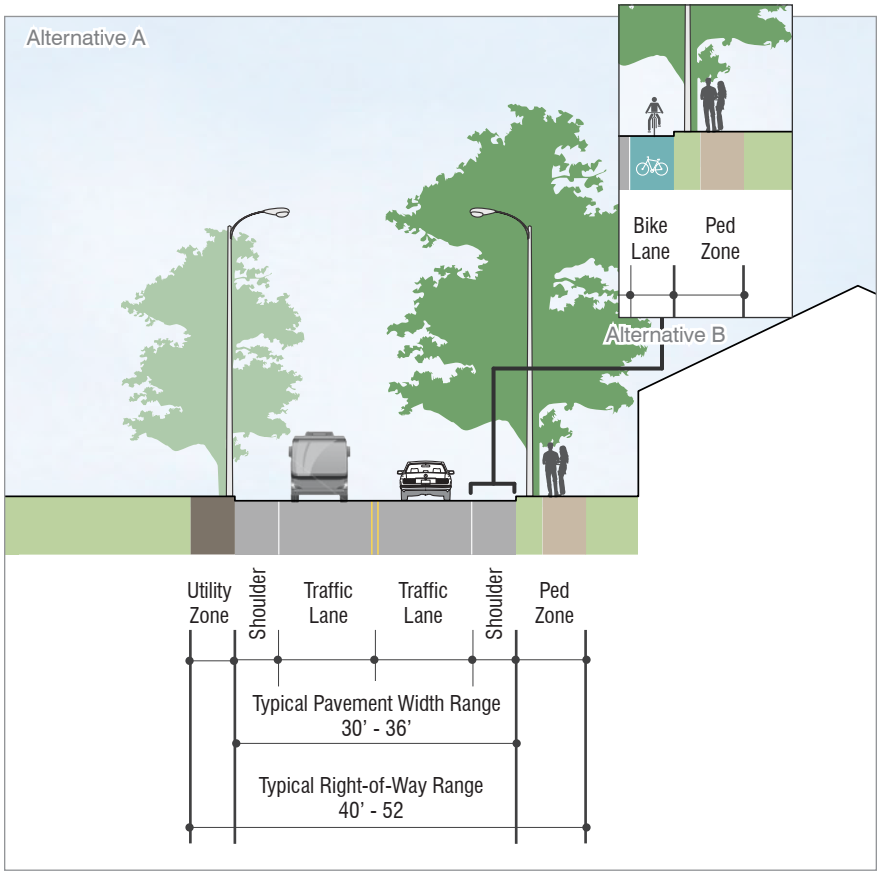

Figure 8: *Typical Existing Street Section for ‘Rural Township Connector’ Typology*

Suburban Township Street

LAND USE	
Complementary Land Use Transect**	Village or town edge retail; transitions to rural area
Complementary Land Use Character	• Retail, offices and personal services with some mixed single, two-family, and garden-apartment style multi-family • Parcels of .05 to 1 acre in size • Structures generally 2-3 stories in height
MOTOR VEHICLE REALM	
Functional Class	Minor arterial
Typical Pavement Width Range	30’ - 48’
Typical Right-of-Way Range	40’ - 64’
Target Speed	30 – 40 mph
Travel Lane Width	10’ – 11’
On-Street Parking	Permitted
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	• Alternative A: wide shoulder (minimum of 5’) • Alternative B: bike lanes (minimum of 5’)
Pedestrian Treatment	Sidewalk (minimum of 5’), multi-use trail or greenway pending right-of-way

***Based on and building from land use transect as included in the “Smart Code” by Duany Plater-Zyberk & Co. with consideration of “Pemberton Land Use Master Plan” and “Browns Mills Town Center Plan”.*

Figure 9: *Street Requirements Table*

Figure 10: *Existing street example - County Road 530, west of County Road 669*

Figure 11: *Existing street example - Junction Road, south of County Road 530*

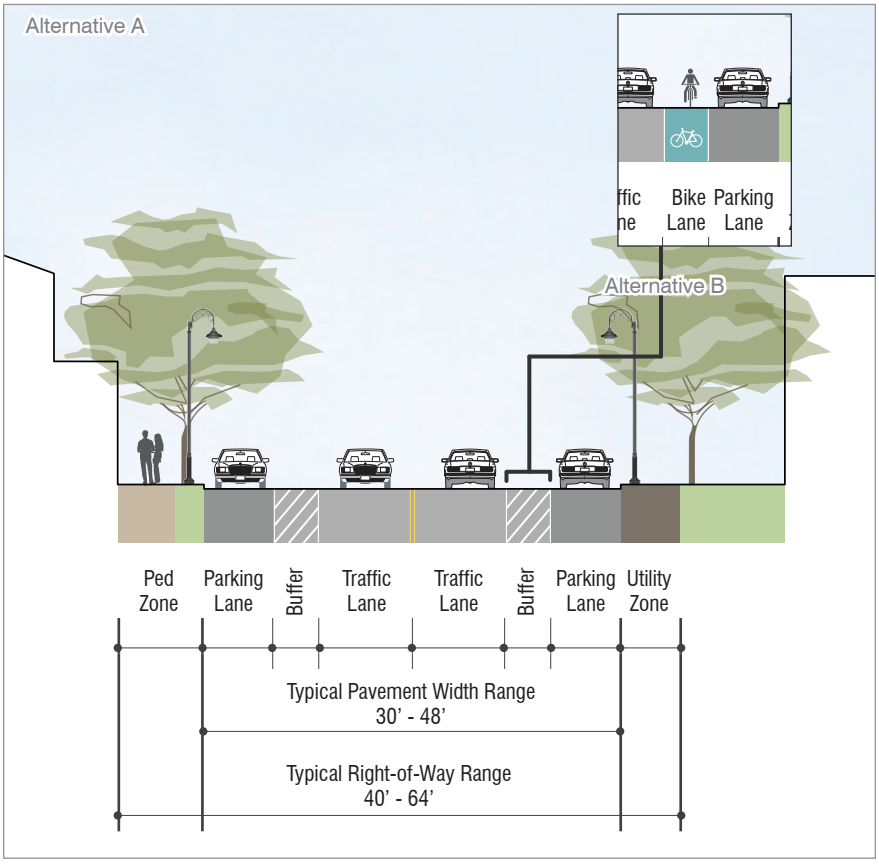

Figure 12: *Typical Existing Street Section for ‘Suburban Township Street’ Typology*

Residential Street

LAND USE	
Complementary Land Use Transect**	Traditional neighborhood
Complementary Land Use Character	• Single and two-family homes • Some pockets of limited neighborhood scale commercial • Can include: work-live units and/or residential over 1st floor retail uses; community spaces (ie: parks, ball fields, library • Parcels of 1 acre or less • Structures generally 1-2 stories in height
MOTOR VEHICLE REALM	
Functional Class	Collector
Typical Pavement Width Range	30' - 48'
Typical Right-of-Way Range	40' - 64'
Target Speed	20 - 35 mph
Travel Lane Width	10' - 11'
On-Street Parking	Permitted
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	• Alternative A: shared use or shared lane markings • Alternative B: bike lanes (minimum of 5')
Pedestrian Treatment	Sidewalk (minimum of 5')

***Based on and building from land use transect as included in the "Smart Code" by Duany Plater-Zyberk & Co. with consideration of "Pemberton Land Use Master Plan" and "Browns Mills Town Center Plan".*

Figure 13: *Street Requirements Table*

Figure 14: *Existing street example - Scrapetown Road, south of College Drive*

Figure 15: *Existing street example - S. Lakeshore Drive, northeast of Bishop Street*

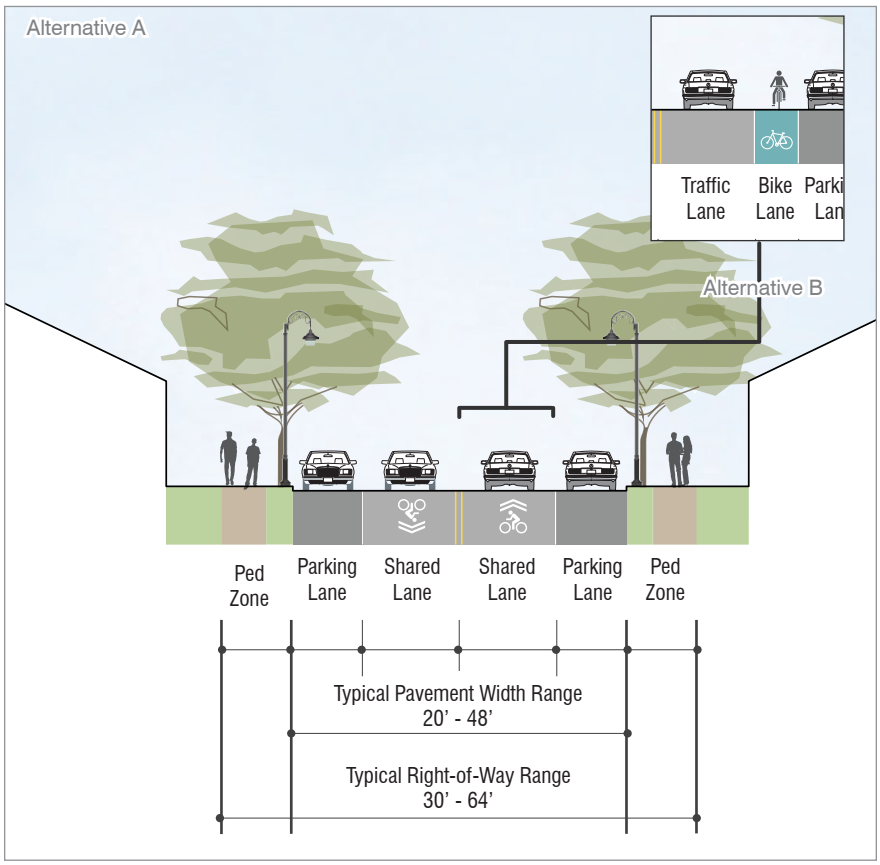

Figure 16: *Typical Existing Street Section for 'Residential Street' Typology*

Residential Road

LAND USE	
Complementary Land Use Transect**	Rural neighborhood
Complementary Land Use Character	• Single family homes, family-farms and agriculture • Some pockets of limited neighborhood scale commercial uses at major street intersections • Parcels of 1 acre or more
MOTOR VEHICLE REALM	
Functional Class	Sub-collector
Typical Pavement Width Range	20’ - 48’
Typical Right-of-Way Range	30’ - 64’
Target Speed	20 - 30 mph
Travel Lane Width	10’ - 11’
On-Street Parking	Permitted
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	• Alternative A: shared use • Alternative B: shared lane markings
Pedestrian Treatment	Sidewalk (minimum of 5’)

***Based on and building from land use transect as included in the “Smart Code” by Duany Plater-Zyberk & Co. with consideration of “Pemberton Land Use Master Plan” and “Browns Mills Town Center Plan”.*

Figure 17: *Street Requirements Table*

Figure 18: *Existing street example - Simontown Road: west of Stockton Bridge Road*

Figure 19: *Existing street example - University Avenue: west of Scrapetown Road*

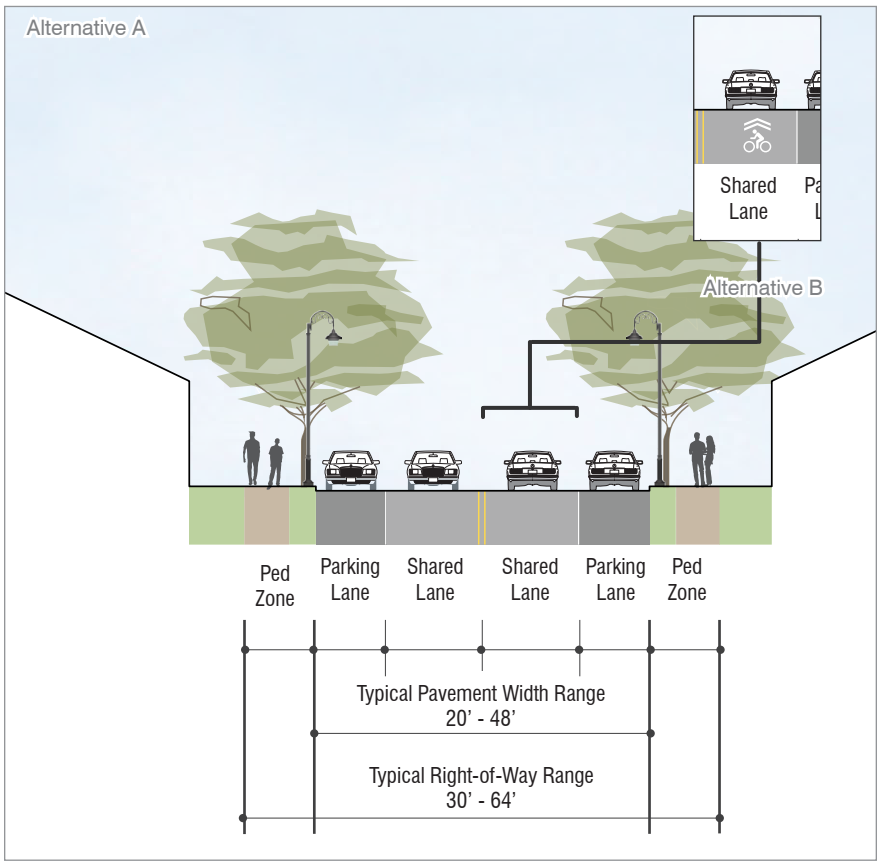

Figure 20: *Typical Existing Street Section for ‘Residential Road’ Typology*

Village Main Street

LAND USE	
Complementary Land Use Transect**	Village center
Complementary Land Use Character	• Mix of village-scale uses with buildings at the sidewalk along the street • Retail uses along the street with offices or residences above; work-live units; village greens and pocket parks; village-center historic districts • Small lots of generally 0.25 acres or less • Structures generally 2-6 stories in height
MOTOR VEHICLE REALM	
Functional Class	Sub-collector/ Local streets
Typical Pavement Width Range	30’ - 52’
Typical Right-of-Way Range	52’ - 76’
Target Speed	20 - 30 mph
Travel Lane Width	10’ - 11’
On-Street Parking	Permitted
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	Shared lane markings
Pedestrian Treatment	Sidewalk (minimum of 5’)

***Based on and building from land use transect as included in the “Smart Code” by Duany Plater-Zyberk & Co. with consideration of “Pemberton Land Use Master Plan” and “Browns Mills Town Center Plan”.*

Figure 21: *Street Requirements Table*

Figure 22: *Existing street example - County Road 530 (Juliustown Rd), east of Dearborn Avenue*

Figure 23: *Existing street example - Browns Mills Town Center Redevelopment Plan (June 1, 2011), Page 62*

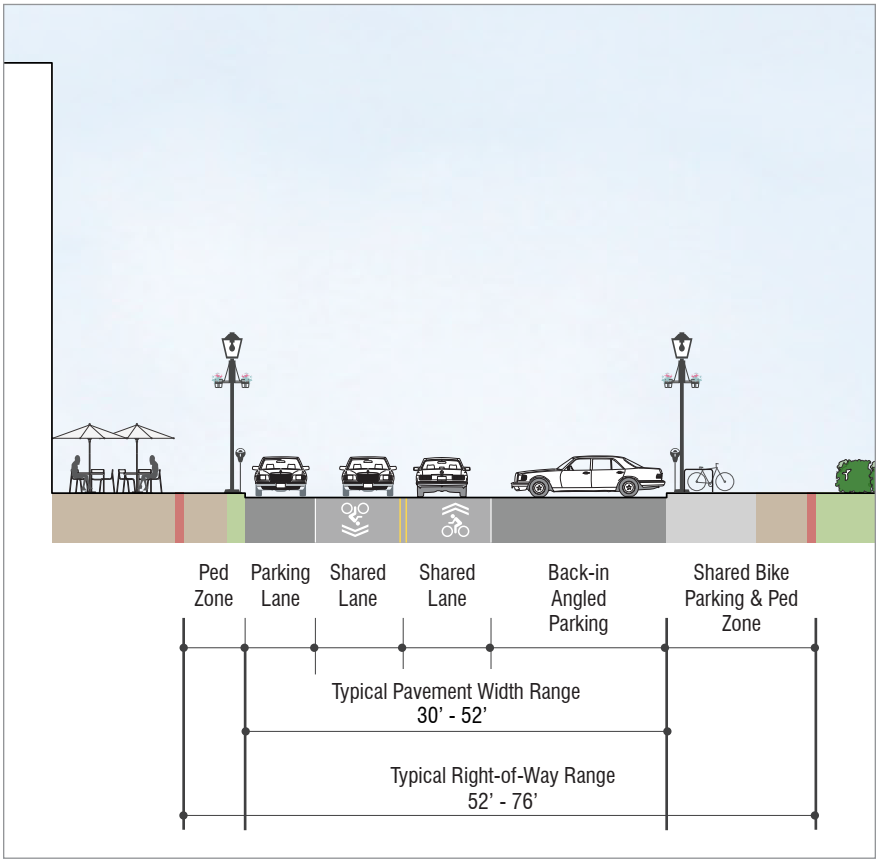

Figure 24: *Typical Existing Street Section for ‘Village Main Street’ Typology*

Alley/ Access Road

LAND USE	
Complementary Land Use Transect**	Village center or town edge; neighborhood
Complementary Land Use Character	• Mix of village-scale uses with buildings at the sidewalk along the street • Retail uses along the street with offices or residences above; work-live units; village greens and pocket parks; village-center historic districts • Small lots of generally 0.25 acres or less • Structures generally 2-6 stories in height
MOTOR VEHICLE REALM	
Functional Class	Other
Typical Pavement Width Range	30’ - 52’
Typical Right-of-Way Range	52’ - 76’
Target Speed	15 - 25 mph
Travel Lane Width	10’
On-Street Parking	Permitted
BICYCLIST & PEDESTRIAN REALM	
Bike Treatment	• Alternative A: shared use • Alternative B: shared lane markings
Pedestrian Treatment	Sidewalk (minimum of 5’)

***Based on and building from land use transect as included in the “Smart Code” by Duany Plater-Zyberk & Co. with consideration of “Pemberton Land Use Master Plan” and “Browns Mills Town Center Plan”.*

Figure 25: *Street Requirements Table*

Figure 26: *Existing street example - Bank Street, north of County Road 530*

Figure 27: *Existing street example - Pear Avenue, north of County Road 667*

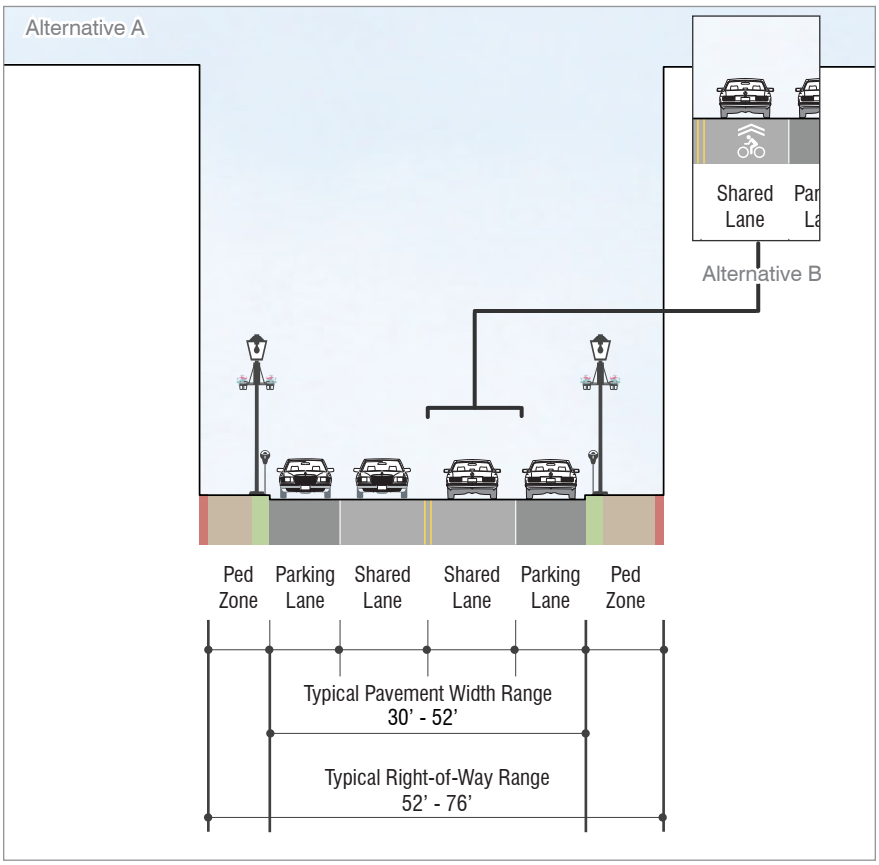

Figure 28: *Typical Existing Street Section for ‘Alley/ Access Road’ Typology*

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Chapter 4

Complete Street Design Guidelines

Introduction

Implementing Complete Streets does not mean that every street should have sidewalks, bike lanes, and transit. There is no universal, prescriptive design. Instead, the concept of Complete Streets is driven by understanding local context, need, and demand. All streets should be designed to fit the context, provide for adequate mobility, and balance among competing needs for access, safety, economic development, and vehicular travel.

The following chapter provides design guidance on a range of treatments that would apply to Complete Streets in Pemberton Township. Design guidelines are organized as follows:

Corridor Treatments:
- Sidewalks
- Bike Lanes
- Bike Compatible Shoulders
- Shared Lane Markings
- Contraflow Bike Lanes
- Advisory Bike Lanes
- Narrowed Lanes
- Bicycle Boulevard

Intersection Treatments:
- High Visibility Crosswalks
- Curb Ramps
- Raised Crosswalks and Intersections
- Pedestrian Lighting
- Crossbike
- Bike Box / Bike Forward Stop Bar
- Curb Extensions
- Daylighting
- Tight Curb Radii
- Pedestrian Refuge Islands
- Signal Improvements
- RRFB

Amenities & Maintenance:
- Maintenance & Accessibility
- Parking
- Sidewalk Furnishings
- Parklets
- Gateways
- Short-Term Bike Parking
- Long-Term Bike Parking
- On-Street Bike Corrals
- Bicycle Repair Stations
- Green Street Enhancements
- Bus Stop Enhancements

Signage:
- Wayfinding
- STOP FOR PEDESTRIAN Sign
- BICYCLES MAY USE FULL LANE Sign
- WRONG WAY RIDING sign
- SHARE THE ROAD Sign

Corridor Treatments

Sidewalks

Example of a residential sidewalk with a tree-lined landscape buffer adjacent to the roadway in Bay Head, NJ

Example of a sidewalk in a downtown business district in Morristown, NJ; it is wide enough to accommodate large amounts of pedestrian activity.

DESCRIPTION

- Sidewalks are dedicated pedestrian travel ways that are constructed adjacent to roadways.
- Sidewalks are the “backbone” of the pedestrian travel network.
- Sidewalks vary in their design and configuration in relationship to surrounding context (downtown, residential, commercial, etc.)

BENEFITS

- Increase safety for all travelers
- Promote walking
- Reduce the incidence of pedestrian collisions, injuries, and deaths
- Enhance the sense of community through better connections to neighbors

CONSIDERATIONS

- Should be designed for universal access and ADA accessibility guidelines
- Require upkeep, maintenance, and snow or ice removal
- Where feasible, sidewalks should be provided on both sides of the street.
- Sidewalk designs are highly variable and should be contextually appropriate.

WHEN TO USE / TYPICAL APPLICATIONS

- Sidewalks should be considered for all public rights-of-way.
- The width of a sidewalk depends primarily on the number of pedestrians who are expected to use the sidewalk at a given time. Per the FHWA Recommended Guidelines/Priorities for Sidewalks and Walkways, all sidewalks should be at least 5’ wide. Near parks, schools, and other major pedestrian generators sidewalks should be 8-10’ wide.
- A minimum 2’ buffer for street furniture, utilities, and snow storage should be provided.

Corridor Treatments

Bike Lanes

Bike lanes can be striped adjacent to parking or adjacent to the curb. When adjacent to parking, a striped buffer area minimize the coc-curence of "dooring" accidents. (Source: NACTO)

Example of a bike lane in Jersey City, NJ

DESCRIPTION

- Designate space for bicyclists through use of striping, pavement markings, and signs
- Most common bicycle facility in the United States

BENEFITS

- Enable bicyclists to ride at their preferred speed without interference from motor vehicle traffic conditions
- Facilitate predictable behavior and movements between bicyclists and motorists
- Visually remind motorists of bicyclists' right to the street

CONSIDERATIONS

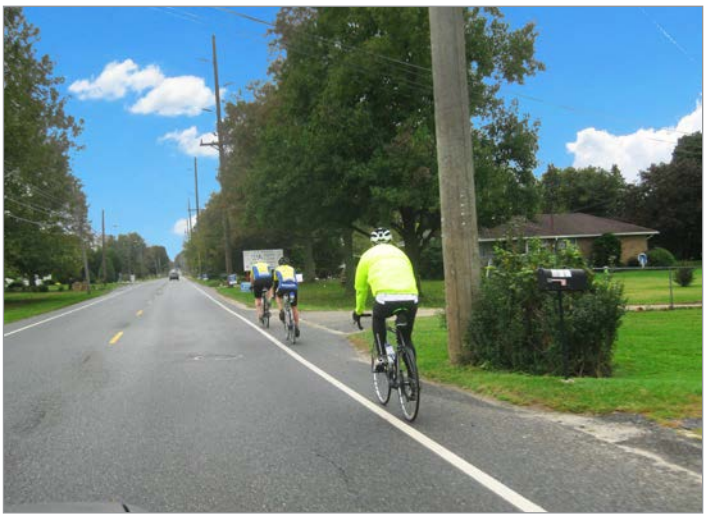
- Not all users will be comfortable in a bike lane.
- When next to on-street parking there is a risk of bicyclists getting "doored"; adding a striped (or constructed) buffer area helps mitigate this conflict.
- Greater enforcement is required to prevent motorists from parking in the bike lane.
- Accommodation through intersections is critical in bike lane design.

WHEN TO USE / TYPICAL APPLICATIONS

- Most helpful on streets with ≥ 3,000 motor vehicle average daily traffic, a posted speed ≥ 25 mph, or high transit vehicle volume
- Typically provided on both sides of two-way streets to prevent wrong-way riding
- Minimum 5' wide next to curb, gutter, or on-street parking
- Where space allows, it is desirable to add a minimum 2' buffer zone between the bike lane and parking.
- Painted bike lanes increase visibility.

Corridor Treatments

Bike Compatible Shoulders



Example of a bike compatible shoulder in Glassboro, NJ

Example of a bike compatible shoulder in Sea Bright, NJ

DESCRIPTION

- Bike compatible shoulders offers bicyclists a preferential use space within the roadway without a formal designation.
- Bike compatible shoulders are most appropriate where wide shoulders already exist or in rural areas.

BENEFITS

- Typically enable bicyclist to utilize existing shoulders to for travel without the provision of bike lane striping
- Enable bicyclists to ride at their preferred speed without interference from motor vehicle traffic conditions

CONSIDERATIONS

- Not appropriate for urban areas
- Shoulders should be maintained clear of puddles, debris, vegetation, and snowpile
- Inlets should be bike compatible
- Where feasible, bike lanes should be used in place of bike compatible shoulders

WHEN TO USE / TYPICAL APPLICATIONS

- Where shoulders ≥4’ wide exist on roads without parking
- Range of configurations based on average annual daily traffic (AADT), posted speeds, and available shoulder:
  - 4’ shoulder: 1200-10,000 AADT and <30-40 MPH
  - 6’ shoulder: 1200-≥10,000 AADT and 41-50 MPH
  - 8’ shoulder: 2000-≥10,000 AADT and ≥50 MPH

Figure 1: *Street Requirements Table*

Corridor Treatments

Shared Lane Markings

Shared lane markings help to position the bicyclists in the travel lane. (Source: NACTO)

Example of a Shared Lane Marking in Maplewood, NJ

DESCRIPTION

- Shared lane markings (SLMs) are road markings used to indicate a shared lane environment for bicycle and automobiles.
- SLMs are not technically considered “bicycle facilities” but they are employed to support a complete bicycle transportation network.
- SLMs are most appropriate for lower volume, lower speed streets.

BENEFITS

- Reinforce the legitimacy of bicycle traffic on the street and alert motor vehicle drivers to the potential presence of bicyclists
- Assist bicyclists with positioning away from the door zone and other hazards
- Can be configured to offer directional and wayfinding guidance
- Require no additional street space
- Reduce the incidence of sidewalk riding and wrong-way riding

CONSIDERATIONS

- SLMs do NOT designate a travel space for the exclusive use of bicyclists.

WHEN TO USE / TYPICAL APPLICATIONS

- On bicycle boulevards or similar low volume, traffic-calmed, shared streets
- When there is insufficient width to provide bike lanes
- Not a preferred treatment on streets with posted 35 mph speeds or faster
- Shared lane markings shall not be used on shoulders or in designated bicycle lanes
- Marking placed a minimum of 11’ from the curb where on-street parking is present or 4’ from the curb without parking

Corridor Treatments

Contraflow Bike Lanes

Example application of a contraflow bike lane (Source: NACTO)

Example of a contraflow bike lane in Portland, OR (Source: NACTO)

DESCRIPTION

- A contraflow bike lane is a bicycle-only lane traveling in the opposite direction of motor vehicle traffic.

BENEFITS

- Provide direct access and connectivity for bicycles traveling in both directions
- Bicyclists do not have to make detours as a result of one-way traffic.
- Limit dangerous wrong-way riding by allowing cyclists to safely ride in the opposite direction of cars
- Reduce sidewalk riding

CONSIDERATIONS

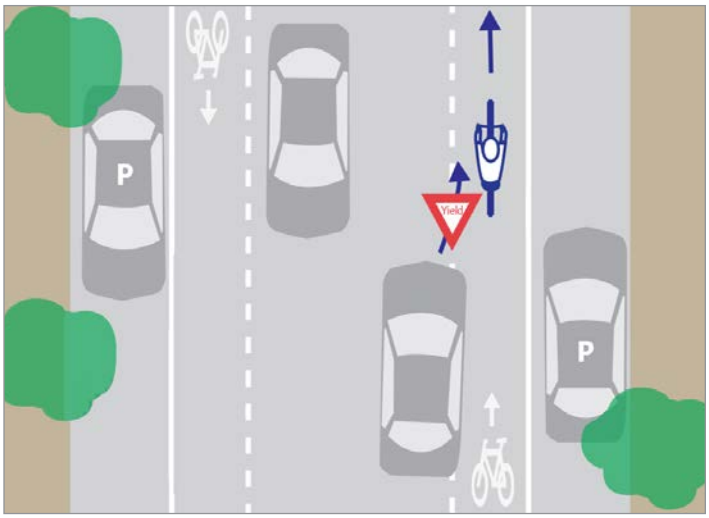
- Use only where bicyclists can effectively and conveniently make transitions at the terminus of the lane

WHEN TO USE / TYPICAL APPLICATIONS

- When there are few intersecting driveways, alleys, or streets on the side of the street with the contra-flow lane
- Contraflow bike lanes have a minimum width of 5’.
- Separated from opposing traffic with yellow center-line striping
- Accompanying signage is needed

Corridor Treatments

Advisory Bike Lanes



Dashed lines delineate travel space for bicyclists that is also available to motorists for passing. (Source: Chicago Cartographers - Minneapolis Public Works Department)

Example of advisory bike lanes in Minneapolis, MN (Source: bikewalktwincities.org)

DESCRIPTION

- Advisory bike lanes are dashed white lines on both sides of a narrow roadway to delineate bicycle areas.
- They are marked with a solid white line on the right when adjacent to on-street parking.
- These markings give bicyclists a space to ride, but are also available to motorists if space is needed to pass oncoming traffic.
- An alternative to the shared lane marking, they are also known as “suggestion lanes” or “dashed bicycle lanes”.

BENEFITS

- Striping offers visual separation and reminds people that the road is a shared space
- Motorists tend to travel slower due to friction created with oncoming vehicles.
- Reduce motorists encroaching on bicyclists

CONSIDERATIONS

- A viable option when the roadway is too narrow for mandatory bike lanes
- Unfamiliarity with the treatment can lead to confusion.
- Less protection for cyclists than a conventional bike lane

WHEN TO USE / TYPICAL APPLICATIONS

- Roads that are too narrow for conventional bike lanes
- Roadways with low traffic volume (less than 6,000 ADT)
- Only used on roads without marked centerlines
- Advisory bike lane width is minimum of 5’.
- The center lane (between the dashed lines) must have a minimum width of 16’.

Corridor Treatments

Narrowed Lanes

Example of Narrowed Lanes in Madison, NJ

Example of Narrowed Lanes in Maplewood, NJ

DESCRIPTION

- Studies have shown that drivers travel more slowly when navigating narrow travel lanes.
- A traffic and speed calming effect can be achieved by narrowing the travel lanes, most commonly through re-striping of the roadway.

BENEFITS

- Excess right-of-way can be shifted to providing wider sidewalks, bicycle lanes, or on-street parking.
- Simple roadway restriping to achieve roadway narrowing is inexpensive.
- Narrowing traffic lanes makes slower speeds seem more natural to drivers and less of an artificial imposition, as opposed to other physical treatments that compel lower speeds or restrict route choice.

CONSIDERATIONS

- Without other provisions for bicyclists, the narrower road may increase conflicts between motor vehicles and bicyclists.
- Visually narrowing travel lanes using paint while leaving a several-foot shoulder that emergency vehicles or cyclists can utilize, effectively provides a narrow lane for motorists and a wider lane for emergency vehicles and law enforcement.

WHEN TO USE / TYPICAL APPLICATIONS

- Lane widths of 10’ are appropriate in urban areas and have a positive impact on a street’s safety without impacting traffic operations.
- Lanes greater than 11’ should not be used as they may cause unintended speeding and assume valuable right of way at the expense of other modes.

Corridor Treatments

Bicycle Boulevard

Bicycle boulevards include elements of route identification, speed control, and traffic volume control. (Source: NACTO)

Example of a Bicycle Boulevard in Madison, WI (Source: NACTO)

DESCRIPTION

- A bicycle boulevards is a low-volume and low-speed street that has been optimized for bicycle travel through treatments such as traffic calming, signage and pavement markings, and intersection crossing treatments.
- These treatments allow through movements for cyclists while discouraging similar through trips by non-local motorized traffic. Motor vehicle access to properties along the route is maintained.
- Also known as “local street bikeways,” “bike/walk streets,” and “neighborhood greenways”

BENEFITS

- Create an attractive, convenient, and comfortable environment for bicyclists of all ages and skill levels
- Can be accomplished with minor changes to street configuration
- Slower vehicle speeds accomplished with traffic-calming measures reduce risk of serious collisions
- Since they are shared facilities, no additional street width is needed.
- Can be combined with neighborhood greening efforts to enhance street closures and traffic circles with trees and landscaping

CONSIDERATIONS

- Access to property, impact on traffic patterns, enforcement issues with motorcycles and mopeds, and emergency response

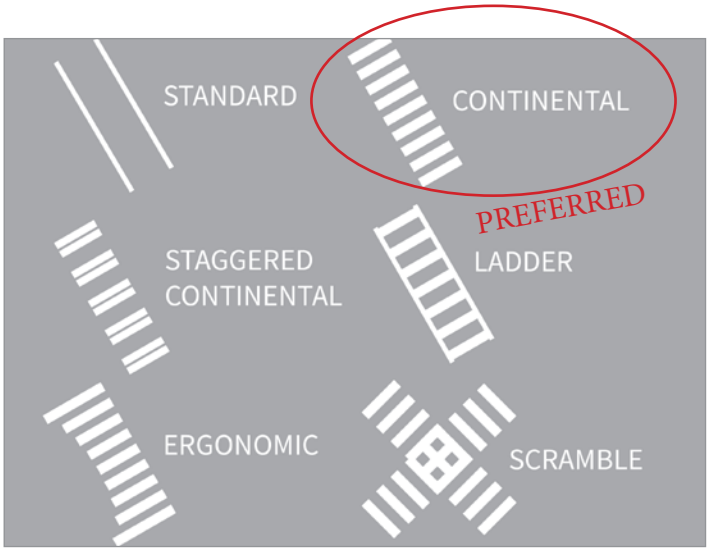
WHEN TO USE / TYPICAL APPLICATIONS

- Best suited for two-lane residential streets without a centerline where vehicle traffic can be restricted to low volumes and slow speeds
- Ideally they are parallel to major streets and provide an alternative without lengthy deviation.
- Can vary greatly in design elements but primary characteristics include low motor vehicle volumes, continuous routes that are well marked and signed, provide convenient access to destinations, minimal bicyclist delay, and comfortable and safe crossings for cyclists at intersections

Intersection Treatments

High Visibility Crosswalks

High-visibility crosswalks have been shown to increase motorist yielding and channelization of pedestrians.



Various patterns are available for crosswalk striping, but "Continental" is preferred.

DESCRIPTION

- A crosswalk is the portion of the roadway designated for pedestrians to use to cross the street, channeling pedestrian crossing activity to designated, predictable, and (most effectively) marked areas.
- Crosswalk striping that creates a high level of visual contrast with the surface of the roadway is most effective for pedestrians (including those with low vision) as well as drivers.

BENEFITS

- Alert motorists to presence of pedestrians crossing the roadway
- Visually instruct pedestrians where it is legal and appropriate to cross the roadway
- Increase pedestrian safety and make pedestrian crossing behavior more predictable for motorists
- Strengthen the pedestrian network and right to the roadway

CONSIDERATIONS

- The continental stripe pattern has been shown in studies to be the most visible marking pattern and stands up well to surface wear.
- Artistic visual elements can be incorporated into crosswalk striping patterns to highlight a point of interest within the community.
- Ergonomic or scramble crosswalks are a variation that can be considered for certain low-speed, high-pedestrian-volume intersections.
- Marked crosswalks alone (without other substantial treatments) should not be installed across uncontrolled roadways where the speed limit exceeds 40 miles per hour.
- Avoid unit paver or stamped pattern surfacing due to difficulty of wheelchair crossing and tendency to deteriorate.

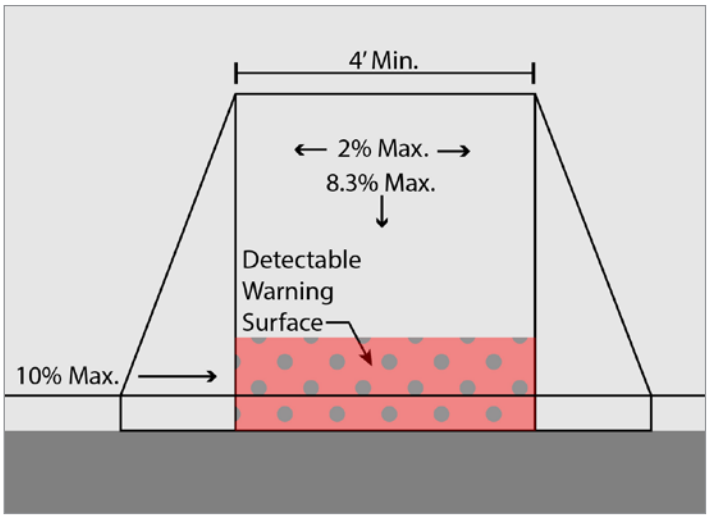
WHEN TO USE / TYPICAL APPLICATIONS

- At roadway intersections where sidewalks or other pathways are present on both sides of the roadway
- Should be designed to minimize crossing distances and should be straight, to make them easier for people with visual impairments to navigate
- Minimum crosswalk width is 6' but can be up to 15' wide at crossings with a high number of pedestrians.

Intersection Treatments

Curb Ramps

Intersections should have two perpendicular, ADA compliant curb ramps per corner, as shown in this example from Jersey City, NJ.



Curb ramps come in multiple configurations that share the benchmark dimensions shown here.

DESCRIPTION

- Curb ramps provide pedestrians with a means of negotiating any change of elevation between the sidewalk and roadway.
- Curb ramps are especially important for people using wheelchairs, strollers, walkers, crutches, handcarts, and pedestrians who have trouble stepping up and down high curbs.

BENEFITS

- Provide safe, trip-free transition from sidewalk surface grade to roadway surface grade
- Increase safety of intersection crossings for pedestrians with mobility or vision impairments

CONSIDERATIONS

- Curb ramps should be provided for all marked crosswalks.
- Curb ramps should be perpendicular to the face of the curb.
- Curb ramps should be maintained clear of obstacles, puddles, and debris.

WHEN TO USE / TYPICAL APPLICATIONS

- Curb ramps must be installed at all intersections and at mid-block locations to access on-street accessible parking spaces, where provided, and at all new passenger loading zones.

Intersection Treatments

Raised Crosswalks and Intersections

A raised crosswalk at Somerville School in Ridgewood, NJ

A raised intersection in Haddonfield, NJ (Source: Voorhees Transportation Center)

DESCRIPTION

- Raised crosswalks are elongated speed humps that feature a marked crosswalk at the same elevation as the adjacent sidewalks.
- Raised intersections are raised areas of roadway, including crosswalks, that are higher than the surrounding roadway approaches -- the entire intersection is at sidewalk grade, putting pedestrians and vehicles on the same plane.

BENEFITS

- Speed reduction / traffic calming
- Improved safety
- Increase visibility of and for pedestrians

CONSIDERATIONS

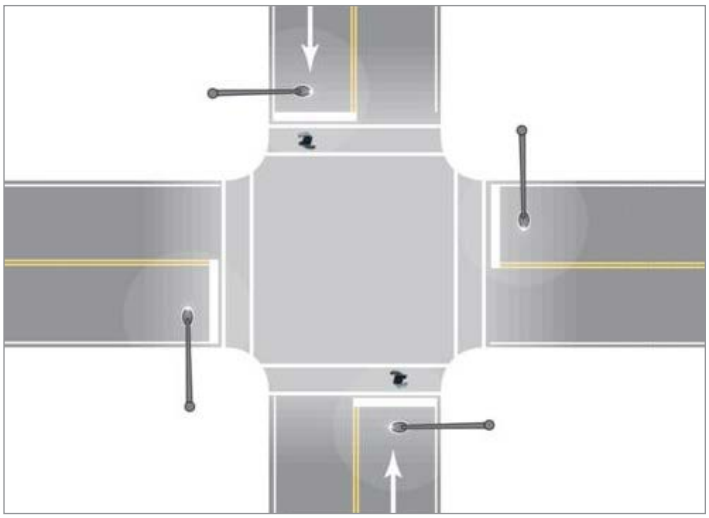
- Roadway noise
- Maintenance
- Need for signage
- Emergency vehicle access

WHEN TO USE / TYPICAL APPLICATIONS

- At intersections or mid-block and should only be used in high pedestrian travel areas
- Most appropriate on streets with only moderate traffic (<10,000 trips/day)
- Particularly effective where heavily used trails cross roadways

Intersection Treatments

Pedestrian Lighting



The layout of this lighting at an intersection illuminates the pedestrian in the crosswalk. (Source: FHWA)

At this mid-block crossing, the pedestrian is illuminated for oncoming vehicles. (Source: LowerEnergyDesigns.com)

DESCRIPTION

- Appropriate and adequate lighting activity is a vital measure for pedestrian safety.
- Pedestrian lighting should work in concert with roadway lighting.
- Pedestrian lighting should be implemented at intersections, important points of interest, and along sidewalk corridors.

BENEFITS

- Increase safety for pedestrians at dawn, dusk, and night hours by providing ability to see and be seen and increasing driver reaction time
- Increase attractiveness and safety of the public realm during non-daytime hours
- Contribute to sense of place

CONSIDERATIONS

- Implementation of pedestrian lighting should include a professional design process that considers the condition and efficacy of existing lighting features, existing utility agreements, and improvements that can be made through supplementing or replacing existing lighting infrastructure.

WHEN TO USE / TYPICAL APPLICATIONS

- Lighting at pedestrian crossings should be used:
  - where the speed limit is ≥40 mph and the roadway does not have adequate pedestrian conflict detection;
  - at intersections, access points, and decision points adjacent to changes in roadway alignment or cross section;
  - at connections to transit;
  - in areas that generate pedestrian activity.
- Pedestrian lighting along sidewalk corridors should be used in shopping districts, downtowns, and areas with high pedestrian volumes.

Intersection Treatments

Crossbike

Intersection crossing markings identify where bicyclists should cross. (Source: NACTO)

Example of a Crossbike in Ocean City, NJ

DESCRIPTION

- A crossbike is a pavement marking adjacent to the crosswalk indicating space for bicycles to cross intersections, driveways, or ramps.

BENEFITS

- Increases visibility of bicyclists at intersections
- Encourages motorists to yield right-of-way to bicyclists waiting to cross
- Informs all roadway users of where bicyclists should cross.
- Separates modes to reduce conflicts

CONSIDERATIONS

- Will have higher than normal wear based on the level of crossing motor vehicle traffic.

WHEN TO USE / TYPICAL APPLICATIONS

- Where main bicycle routes cross relatively minor collectors
- Where cross traffic has to yield right-of-way to crossing bicyclists
- Not appropriate where speeds exceed 30 mph unless signalized

Intersection Treatments

Bike Box / Bike Forward Stop Bar

Bike boxes place bicyclists ahead of motor vehicle traffic at intersections. (Source: NACTO)

Example of a bike box in San Francisco, CA (Source: San Francisco Bicycle Coalition)

DESCRIPTION

- A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase.
- A bike forward stop bar is a designated area at the head of a traffic lane at an *unsignalized* intersection that accomplishes the same objectives as a bike box.

BENEFITS

- Provides a space for cyclists to wait
- Reduces right-turn ("right-hook") conflicts between bicyclists and motorists at intersections by increasing cyclist visibility to drivers
- Allows cyclists to position themselves properly to execute a left turn and increases their visibility to drivers traveling in the opposing direction

CONSIDERATIONS

- Right turns on red must be prohibited, though an exception may be made for cyclists ("Except Bikes").
- May not be compatible at intersections with high volume of right-turning vehicles

WHEN TO USE / TYPICAL APPLICATIONS

- Bike box at signalized intersections with high volumes of bicycles and/or motor vehicles
- Intersections with frequent bicyclist left-turns and/or motorist right-turns
- Where a left turn is required to follow a designated bike route
- When the dominant motor vehicle traffic flows right and bicycle traffic continues through
- Bike boxes are typically 14' deep to allow for bicycle positioning

Intersection Treatments

Curb Extensions

A constructed curb extension improves pedestrian conditions at this busy intersection in Hoboken, NJ

A painted (epoxy) curb extension with pylons is an effective interim or low-cost solution

DESCRIPTION

- Curb extensions narrow the roadway by extending the curb at key intersections and mid-block locations.
- Curb extensions can either be “constructed”, with curbs and concrete surface, or “painted” over existing roadway pavement.

BENEFITS

- Traffic calming: reduction in travel and turning speeds
- Reduce crossing distance for pedestrians
- Increase visibility of pedestrians in the roadway environment

CONSIDERATIONS

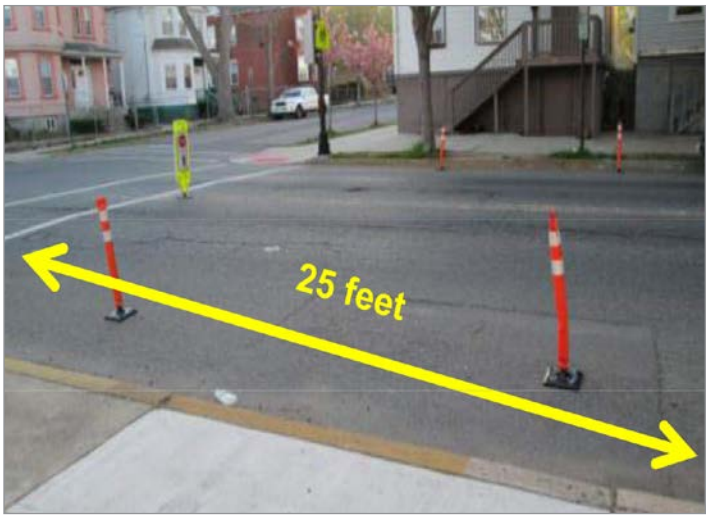
- Constructed curb extensions can be costly, especially if roadway drainage must be reconfigured
- Can reduce availability of on-street parking
- Can complicate plowing and street sweeping operations

WHEN TO USE / TYPICAL APPLICATIONS

- Curb extensions can be implemented at intersections, mid-block crossings, and transit stops on all types of streets.
- Installation of curb extensions should focus on areas of high pedestrian demand where traffic calming is also a priority.

Intersection Treatments

Daylighting



Plastic pylons mark and preserve the no-parking area at this intersection in New Brunswick, NJ. (Source: Voorhees Transportation Center)

This daylit intersection in New Brunswick, NJ provides space for bike parking. (Source: njbikeped.org)

DESCRIPTION

- By law in New Jersey it is illegal to park within 25' of an intersection and within 50' of a stop sign. However, illegal, mainly short-term parking is common in these areas.
- By "daylighting" corners with vertical markers (commonly plastic pylons), the no-parking areas at intersection can be maintained open and provide visibility at intersections, as intended.

BENEFITS

- Sight lines at intersections are maintained clear.
- Roadway users at intersections are more visible to each other.
- Reaction times increase.
- Turns are easier for trucks.

CONSIDERATIONS

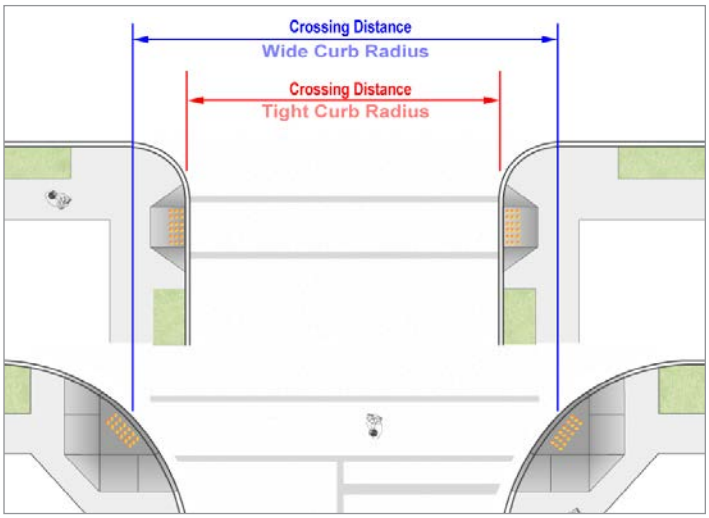
- Daylighting can be a permanent solution or interim application in a larger corner build-out including curb extensions.
- Daylighting can provide space in the street for bicycle parking and act as a gathering place for people.

WHEN TO USE / TYPICAL APPLICATIONS

- At intersections or other no-parking areas where illegal parking is a concern

Intersection Treatments

Tight Curb Radii



A reduction in curb radius can reduce the intersection crossing distance for pedestrians.

This modified curb radius reduces the speed of turning vehicles and shortens the pedestrian crossing. (Credit: Michael Hintze/pedbikesafe.org)

DESCRIPTION

- The curb radius at intersections is often designed for the largest of vehicles to make a right turn without deviating from their traffic lane. Most curb radii are underutilized by such vehicles, and the large radii instead enable standard automobiles to turn at high speeds, while pedestrians are left with awkward, overly long roadway crossing situations.
- By reducing the curb radius, the large vehicles can still be accommodated, yet pedestrians can benefit from a measure of traffic calming and a more orderly roadway crossing situation.

BENEFITS

- Reduce the speed of turning vehicles
- Allow pedestrians to see and be seen
- Shorten the crossing distance for pedestrians
- Decrease the number of crash conflicts

CONSIDERATIONS

- Turning radii of buses, trucks, and emergency vehicles using the roadway
- Large trucks do not need to stay on their half of the street when turning onto local streets, and therefore the corner radius does not need to anticipate a close turn by all large vehicles.

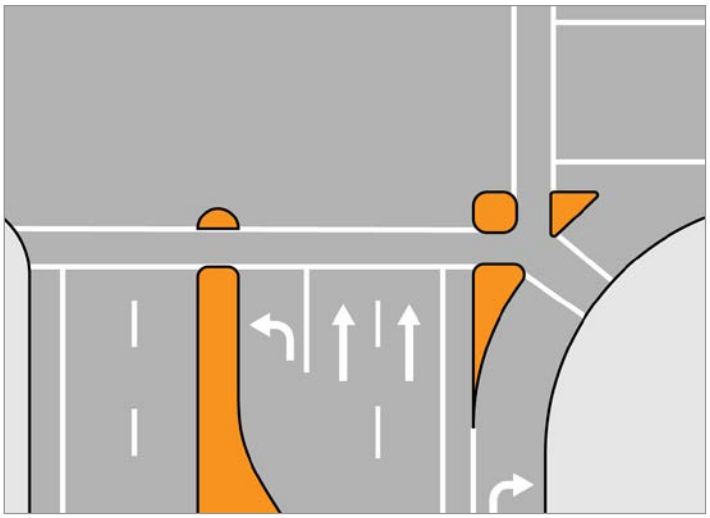
WHEN TO USE / TYPICAL APPLICATIONS

- Consider application at intersections where turning vehicles have more space than they need, resulting in a proclivity for fast turns or a high incidence of pedestrian collisions.

Intersection Treatments

Pedestrian Refuge Islands

This pedestrian refuge island cuts through a planted median in Austin, TX. (Source: NACTO)



Refuge islands can make pedestrian crossing safer and more predictable at complex intersections.

DESCRIPTION

- Pedestrian refuge islands, also known as crossing islands, are protected spaces placed on a street at intersections or mid-block crossing locations to separate crossing pedestrians from motor vehicles.
- Refuge islands split the crossing distance into manageable portions for slow-moving pedestrians.

BENEFITS

- Reduce pedestrian crossing distance
- Provide pedestrian rest area, separated from automobile traffic
- Reduce speeds by narrowing travel lane widths
- Provide an opportunity for visual enhancement to promote neighborhood identity

CONSIDERATIONS

- May reduce parking and driveway access
- May involve narrowing of traffic lanes
- Narrower road may also increase motor vehicle/bicycle conflicts
- Align lanes so that the number of approach and departure lanes are equal and appropriately opposed to one another; limit the number of approach lanes to as few as necessary.

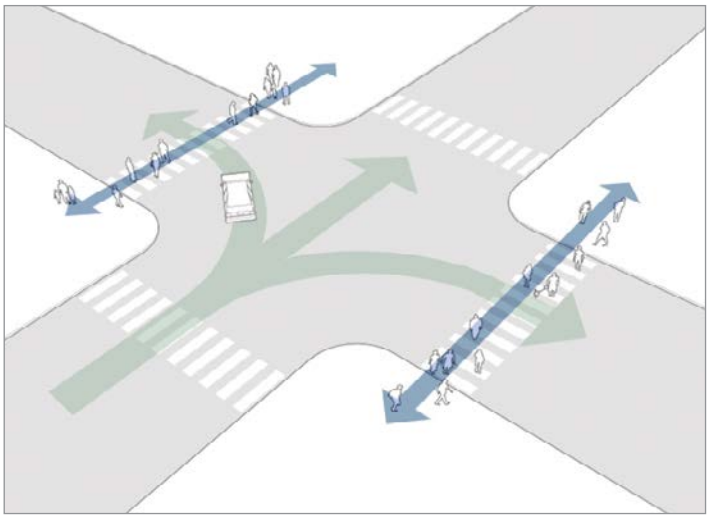
WHEN TO USE / TYPICAL APPLICATIONS

- At wide intersections
- At irregularly shaped intersections
- At intersections where two roads converge into one
- A cut-through median remains level with roadway grade, offering a more efficient design in comparison to raised median islands

Intersection Treatments

Signal Improvements

A pedestrian countdown signal (Source: wikimedia.org)



LPIs reduce conflict where pedestrian and turning volumes are high. (Source: modified from NACTO)

DESCRIPTION

- A pedestrian countdown signal displays the number of seconds remaining until the signal changes.
- A leading pedestrian interval (LPI) provides pedestrians an advanced walk signal to proceed in the crosswalk before motor vehicles can advance.
- Integrate analysis of the level of service provided at traffic signals for pedestrians, bicyclists, and transit operations with traditional level of service applied to motor vehicles.
- Design intersections and traffic signals that provide safety, accessibility, and operational benefits to pedestrians, bicyclists, and transit operations.

BENEFITS

- Pedestrian countdown signals help pedestrians accurately decide when it is safe to cross and when they should wait.
- LPIs make pedestrians more visible in the intersection, particularly to right-turning motorists who are more likely to yield.

CONSIDERATIONS

- Adjustments to signal timing
- Visibility of pedestrian countdown signals in direction of each crosswalk
- Signage

WHEN TO USE / TYPICAL APPLICATIONS

- Pedestrian countdown signals are typically used:
  - At intersections with complex signal phasing (e.g. there is a dedicated left turn phase for motorists);
  - When an exclusive pedestrian signal phase is provided;
  - At school zone crossings;
  - At intersections with pedestrian refuge islands.
- LPIs are typically used where pedestrian volumes and motor vehicle turning movement volumes are both high, and are critical where turning movements create consistent conflict.

Intersection Treatments

Rectangular Rapid Flashing Beacon

RRFB at a mid-block crossing for pedestrians and bicyclists in Linwood, NJ

RRFBs at a multi-lane crossing with a pedestrian refuge island (Source: pedbikesafe.org)

DESCRIPTION

- Rectangular rapid flashing beacons (RRFBs) are active warning devices used to alert motorists of crossing pedestrians at uncontrolled crossings.
- They remain dark until activated by pedestrians, at which point they emit a bright, rapidly flashing yellow light, which cautions drivers to stop.

BENEFITS

- Increase yielding rates over standard pedestrian warning signs, thereby increasing pedestrian safety

CONSIDERATIONS

- Decreased effectiveness may result from overuse, therefore, RRFBs should be limited to locations with the most critical safety concerns, such as pedestrian and school crosswalks with uncontrolled vehicle approaches.
- RRFBs have received interim approval from FHWA (pending their formal inclusion in the MUTCD) under Section 1.A.10 of the 2009 MUTCD; however, jurisdictions wishing to use them must inform FHWA prior to installing them on any roadway.

WHEN TO USE / TYPICAL APPLICATIONS

- RRFBs should be installed on both the right and left sides of the roadway (both ends of the crosswalk), or in a median if available on the approach to important pedestrian crossings.

Maintenance and Accessibility

Snow removal, beyond just roadway surfaces, is a maintenance consideration throughout New Jersey.

Good planning can help avoid the situation pictured here and maintain pedestrian facilities with appropriate clear sones, free of obstacles, such as sign posts or utility poles.

DESCRIPTION

- Develop maintenance procedures that ensure, preserve, or enhance accessibility and safety for pedestrians, bicyclists, and transit users of all ages and abilities. For example, bike lanes should be included in snow clearing, debris removal, and any other relevant maintenance activities.
- Each project design should be coordinated with appropriate ADA accessibility strategies that consider the placement of sidewalks, ramps, crosswalks, transit stops, and other elements.

BENEFITS

- Maintenance practices that keep Complete Streets facilities open and accessible preserve the many benefits associated with Complete Streets throughout the year and over time.

CONSIDERATIONS

- Analyze railroad stations to ensure safety, access, and accommodation for bicyclists and pedestrians of all ages and abilities.
- When designing a facility that includes or crosses an existing or future transit route, ensure that the appropriate pedestrian and ADA access is provided to and from the transit stops.
- Analyze school locations to ensure safety, access, and accommodation for students who bicycle or walk to school.

WHEN TO USE / TYPICAL APPLICATIONS

- Maintenance procedures and ADA accessibility should be considered throughout and fully incorporated into the planning and design process of all Complete Streets facilities.

Amenities and Maintenance

Parking

On-street parking can be employed as a buffer to the sidewalk. Adjacent bike lanes should be wide enough to avoid "dooring" accidents.

This shopping center parking lot in Bridgewater, NJ includes a pedestrian walk that enables safe and comfortable access to multiple stores without moving the car.

DESCRIPTION

- Parking is an important Complete Streets consideration because it is the interface between two important modes of transportation: drivers become pedestrians when they park and exit their vehicles; likewise, pedestrians become drivers when they enter and operate their parked vehicles.

BENEFITS

- On-street parking is supportive of downtown businesses and can also serve residential needs.
- Off-street parking is necessary for access to shopping centers and residences.
- Parking facilities that are designed to infiltrate stormwater help to reduce runoff and pollution.

CONSIDERATIONS

- For on-street parking, limit curb cuts to enhance the pedestrian experience and increase space parking.
- Use on-street parking to buffer street traffic and reduce pedestrian and vehicle conflicts.
- Where angled on-street parking is employed, position parked cars facing outwards ("head out angle parking") to improve vehicle access and increase safety for cyclists.
- Promote parking facilities that serve multiple businesses rather than individual stores each with their own parking facility. This reduces inefficiency and increases flexibility.
- Provide well-marked pedestrian pathways with alternate paving and raised crosswalks within large parking lots.

WHEN TO USE / TYPICAL APPLICATIONS

- Parking is pervasive and often the subject of perceived demand. Parking studies can be conducted to "right size" parking facilities and strike a balance between demand and capacity.

Amenities and Maintenance

Sidewalk Furnishings

Sidewalk seating fosters a "sense of place," providing the opportunity for people to enjoy the public realm.

Trash receptacles foster a clean and sightly streetscape.

DESCRIPTION

- The pedestrian experience is enhanced, both functionally and aesthetically, through the selection and use of sidewalk furnishings that support the use of the street as part of the public realm.

BENEFITS

- Appropriate sidewalk furnishings support vibrant commercial districts, foster a "sense of place," help people to spend time outdoors, and help keep the streetscape clean.

CONSIDERATIONS

- Selection of sidewalk furnishings is linked to the streetscape context and may include benches, receptacles, lighting, bike racks, bus shelters, kiosks, and other types.
- Sidewalk furnishings should be laid out thoughtfully to avoid obstructions and clutter.

WHEN TO USE / TYPICAL APPLICATIONS

- Sidewalk furnishings are typically associated with downtown business districts, shopping centers, and parks.

Amenities and Maintenance

Parklets

A parklet in Sacramento, CA. (Source: sacbike.org)

A parklet under construction in Princeton, NJ (Source: nj.com)

DESCRIPTION

- Parklets re-imagine a portion of the street next to the sidewalk -- usually 1-2 parallel parking spaces -- as public space suitable for people to use and enjoy.
- Parklets provide amenities like seating, planting, bicycle parking, WiFi, and public art.

BENEFITS

- Create a high quality public space experience out of a parking space or other mundane land use
- Foster neighborly interaction
- Usually designed with a sense of whimsy and delight
- Support the sense of place
- Usually grass-roots initiatives that bring together civic-minded organizations and individuals.

CONSIDERATIONS

- Can be temporary or permanent in their design, materials, and execution
- Full gamut of design considerations: site, program, size, height, materials, colors, etc.
- Construction scope, oversight, and building codes

WHEN TO USE / TYPICAL APPLICATIONS

- Parklets are typically constructed in parallel parking spaces adjacent to the curb, extending the sidewalk/ public space realm into the parking lane.
- Parklet ideals can be translated to any public space that would benefit from a higher use.

Gateways

These pillars, signs, median, and landscaping form a gateway element in Sparta, NJ.

Example of a gateway leading to Forest Hill School in Camden, NJ (Source: Voorhees Transportation Center)

DESCRIPTION

- A gateway is a signing, landscaping, or structural treatment to alert motorists they are entering a lower speed environment and they should expect bicyclists and pedestrians.
- A gateway can be as simple as signs and landscaping and can be supplemented with other traffic calming measures such as bulb outs, public art and raised crosswalks.

BENEFITS

- Create a unique visual aesthetic for an area
- Create a "sense of arrival"
- Heighten awareness of drivers, bicyclists, and pedestrians as they enter a new area

CONSIDERATIONS

- Can require routine or periodic maintenance to preserve visual appeal

WHEN TO USE / TYPICAL APPLICATIONS

- Can be used at entrances to commercial areas, town centers, school zones, neighborhoods, or busy places of activity

Amenities and Maintenance

Short-Term Bicycle Parking

Short-term bicycle parking in Newark, NJ

Short-term bicycle parking is available in a range of styles appropriate to everything from downtown retail districts to trailside access points.

DESCRIPTION

- Short-term bicycle parking is used at locations where it is expected that the user will be using the space for the length of a typical errand. In these instances, bicycle racks provide easy access and are typically easy to locate.

BENEFITS

- Low cost and fast implementation
- May be able to use existing fixtures such as meters and tree guards to retrofit racks
- Highly secure and requires little maintenance other than snow removal

CONSIDERATIONS

- Bicycle is not completely secure and parts can be removed by vandals.
- Cannot be reserved and may not be consistently available for daily commuting to a transit facility or workplace
- Bicycle is typically exposed to the elements and possible weather damage such as rust.
- Shelters from sun and rain are preferred for all bicycle parking.

WHEN TO USE / TYPICAL APPLICATIONS

- A short-term parking fixture should be:
  - Convenient to cyclist destination;
  - Placed no more than 50’ from the entrance;
  - Visible from the destination to provide security;
  - Located in a high-traffic area for security;
  - Identified by MUTCD sign D4-3 “Bicycle Parking;”
  - Located along natural “desire lines” from bikeways.

Amenities and Maintenance

Long-Term Bicycle Parking

Bike lockers in Princeton Junction, NJ

Interior controlled-access long-term bicycle parking in Montclair, NJ (Source: njbikeped.org)

DESCRIPTION

- Long-term parking consists of a wider variety of fixture types and site plan layouts and includes cages and bicycle rooms, as well as lockers located in a variety of different settings, both indoors and outdoors.

BENEFITS

- Highly secure, with low risk of vandalism or theft
- Offers protection from the elements and weather related damage and corrosion
- Leased spaces allow for consistent availability for daily cyclist commuters

CONSIDERATIONS

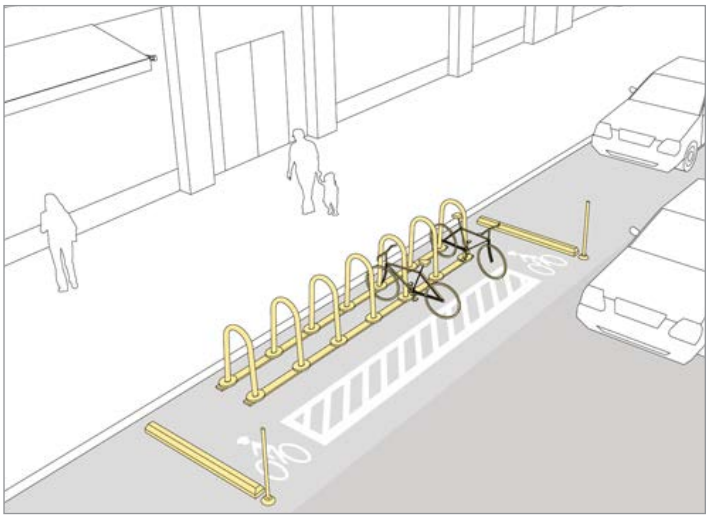
- High construction and maintenance costs

WHEN TO USE / TYPICAL APPLICATIONS

- Controlled access through either a smart card or key
- A portion of lockers are available to lease as well as on-demand.
- Can also be proved by using a dedicated bicycle room or caged area in a garage with smart card/secure access
- Generally a high level of security is provided with effective lighting, security cameras, or security guards.
- Protection from weather and the elements is provided, either indoors or with a shelter.

Amenities and Maintenance

On-Street Bike Corrals



A bike corral installed on the street provides ample bike parking and preserves sidewalk space for pedestrians. (Source: NACTO)

Example of a bike corral in Pittsburgh, PA (Source: Bike Pittsburgh)

DESCRIPTION

- Bicycle corrals (also known as "on-street" bicycle parking) consist of bicycle racks grouped together in a common area within the public right-of-way.
- Relatively inexpensive way to increase the quantity, accessibility, and overall visibility of bicycling

BENEFITS

- Bicycle corrals move bicycles off the sidewalks, leaving more space for pedestrians, sidewalk café tables, etc.
- Because bicycle parking does not block sight lines (as large motor vehicles do), it is possible to locate bicycle parking in 'no-parking' zones near intersections and crosswalks.
- Typically hold between five and twelve bike racks (10-24 bike parking spaces) in an area equal to one vehicular parking space
- Corrals act as de facto curb extensions that effectively shorten crossing distances and increase visibility at intersections.

CONSIDERATIONS

- Bike corrals need a maintenance partner (local businesses, property owners, or neighborhood groups) to keep the bike corral clear of debris and snow if installed year round.

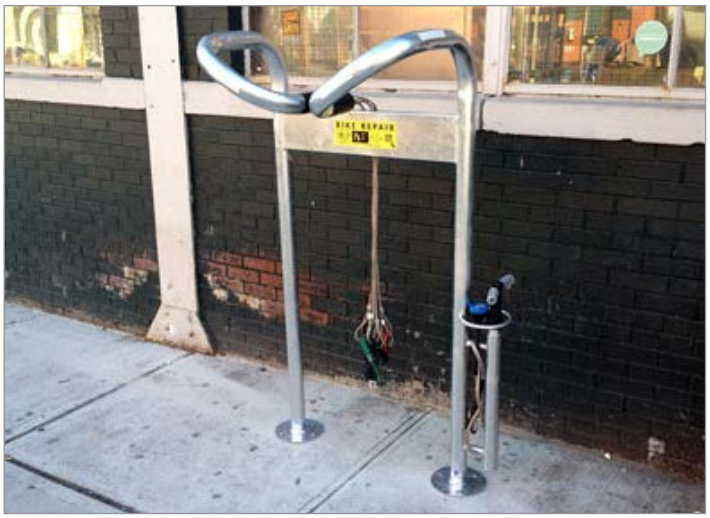
WHEN TO USE / TYPICAL APPLICATIONS

- High pedestrian activity or narrow sidewalk width limits available space for sidewalk bike racks.
- There is a moderate to high demand for short-term bicycle parking.
- The business community is interested in sponsoring bicycle corrals.
- Can be visually enhanced through the use of attractive planters and vegetation to act as buffers from the motor vehicle parking area.

Amenities and Maintenance

Bicycle Repair Stations

Bicycle repair station at University of California Santa Barbara (Source: www.ucsb.edu)



Bicycle repair station in Hoboken, NJ (Source: City of Hoboken)

DESCRIPTION

- Bicycle repair stations allow cyclists to make minor repairs to their bikes using a free air pump and other tools.

BENEFITS

- The repair stands improve the convenience for cyclists making minor, routine repairs, much like services that gas stations often provide for drivers.

CONSIDERATIONS

- Heavy-duty cables are used to attach tools and pump to the station and prevent theft.

WHEN TO USE / TYPICAL APPLICATIONS

- Generally installed in highly visible spaces often near bike corrals and bicycle friendly businesses.

Amenities and Maintenance

Green Street Enhancements

Mature street trees and potted plants enhance the appearance and comfort of the streetscape in Sparta, NJ.

Permeable pavements and rain gardens help absorb and infiltrate stormwater (Source: NACTO)

DESCRIPTION

- Roadways are a significant component of the greater landscape and can improve in appearance and function by including trees and plants.
- Roadways are more enjoyable for people when they include trees and plants.
- Green infrastructure interventions can be employed to promote direct infiltration of stormwater.

BENEFITS

- Healthy street trees provide a visual delineation between the sidewalk environment and the roadway and provide cooling shade.
- Plantings that are integrated into streetscape structures, such as curb extensions and pedestrian refuge islands, provide visual appeal and local character.
- All plants included in the streetscape environment will reduce the amount of stormwater runoff, and many can be employed to attract birds and pollinators or remove contaminants from soil.

CONSIDERATIONS

- Streetscape plants and trees should be selected for urban tolerance, salt tolerance, low-maintenance, and size at maturity.
- Maintenance commitments should be fully understood prior to installation of streetscape plantings.
- Ensure that root zones will have sufficient access to soil.
- Perennial, ornamental grass, or shrub plantings should never exceed 24” in height in areas where they may constrain roadway visibility.

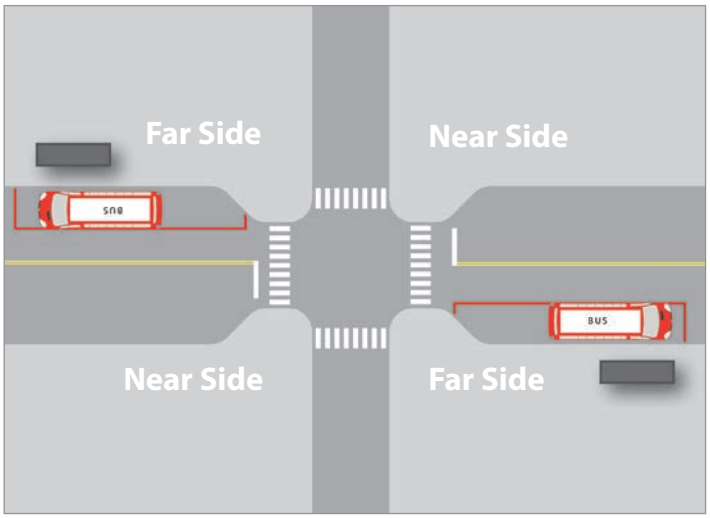
WHEN TO USE / TYPICAL APPLICATIONS

- Street trees are appropriate for planting in the “utility strip” often found between the sidewalk and the curb, adjacent to a roadway, or in curb extensions, or medians.
- Perennial, ornamental grass, or shrub plantings are appropriate in curb extensions, medians, and to define gathering or seating areas. Containerized plantings can be advantageous because they are moveable and never interfere with underground utilities.

Amenities and Maintenance

Bus Stop Enhancement

A "bus bumpout" is an extension of the sidewalk that enables safe and efficient access between the sidewalk and the bus. (Source: pedbikeimages.org)



Far side bus stop locations allow pedestrians to cross the intersection behind the bus, rather than in its travel path.

DESCRIPTION

- The design of and conditions around bus stops can affect pedestrian safety and transit ridership. Bus stops are required to meet ADA standards and should be a logical continuation of the sidewalk network. Bus shelters, agency logos, route maps, and adequate lighting will generally improve the bus transit experience and increase safety for bus transit users.

BENEFITS

- Bus stop enhancement can increase bus transit ridership and improve the overall experience.

CONSIDERATIONS

- Bus stops are part of the pedestrian network and must meet ADA standards.
- Bus stops are safer/improved with shelters, logos, route maps, and lighting.
- Bus shelters should be cleaned and maintained (often achieved through advertising contracts).
- Bus shelters are an opportunity for custom design, local art, and placemaking.

WHEN TO USE / TYPICAL APPLICATIONS

- Far side bus stops are preferred, allowing pedestrians to cross the street behind the bus.
- Near side bus stops should be used where the far-side location is problematic or to access key destinations.

Signage

Wayfinding

Wayfinding signs and systems are uniquely designed for the surroundings and context.

Wayfinding example from Jersey City, NJ

DESCRIPTION

- Wayfinding is the visual infrastructure that people use to orient themselves and navigate from place to place. It often takes the form of overtly placed signs and directional materials, but can also include existing landmarks, such as buildings or geological features.

BENEFITS

- Wayfinding improves the overall connectivity of the roadway, bicycle, and pedestrian networks by creating cognitive connections over physical space. In other words, wayfinding enhances mobility.

CONSIDERATIONS

- Wayfinding can be smart and employ real-time information, such as traffic delays, parking availability, or road construction, and provide alternate routes.
- Wayfinding is subject to the need for updating over time and should be budgeted accordingly.

WHEN TO USE / TYPICAL APPLICATIONS

- Wayfinding should be provided for all roadway users and designed for different points of perception: pedestrian, bicycle, or motor vehicle. The placement, height, distance, and approach vary for each type of users, so wayfinding materials should be designed for an intended type of user.
- Wayfinding often appears as signage, but can also be applied to paved surfaces, existing structures and utilities.

Signage

STOP FOR PEDESTRIAN Signs

R1-5c

R1-6a

The Manual of Uniform Traffic Control Devices (MUTCD) guides the use and placement of traffic signs.

STOP FOR PEDESTRIANS WITHIN CROSSWALK sign in Morristown, NJ

DESCRIPTION

- Signs can be used to alert or inform motorists of a condition or a potential situation.
- Speed limit signs, pedestrian/bicycle/school crossing signs, and in-street pedestrian crossing signs have been used by municipalities to warn motorists of high pedestrian activity, and can help to reduce speeds.
- Can be used in conjunction with other measures such as pavement markings

BENEFITS

- Can be low cost
- Increase awareness to drivers of the presence of other roadway users
- Can contribute to a “sense of place”, helping travelers to become oriented to their surroundings and confidently arrive at desired locations

CONSIDERATIONS

- Can clutter the roadway especially on residential streets
- In-street signs may get hit or may need to be removed at night and placed back during the day.
- Overall effectiveness can vary.

WHEN TO USE / TYPICAL APPLICATIONS

- Roadway signs need to be selected and placed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Signage

BICYCLES MAY USE FULL LANE Sign

MUTCD Sign R4-11

Example of sign R4-11 "Bicycles May Use Full Lane" applied to the roadway (Source: bikewalktwincities.org)

DESCRIPTION

- Sign R4-11 "Bicycles May Use Full Lane" may be used in locations where it is important to inform road users that bicyclists might occupy the travel lane.

BENEFITS

- Reinforces the law to both motorists and bicyclists that bicyclists may occupy the travel lane

CONSIDERATIONS

- Could mislead inexperienced bicyclists into operating in situations that are beyond their ability

WHEN TO USE / TYPICAL APPLICATIONS

- May be used on roadways where no bicycle lanes or adjacent shoulders usable by bicyclists are present and where travel lanes are too narrow for bicyclists and motor vehicles to operate side by side.
- The sign may be used in addition to or instead of shared lane markings.

Signage

WRONG WAY RIDING Sign

The R5-1b and R9-3cP regulatory signs enforce the proper direction of travel for bicyclists (Source: MUTCD)

Example of the Bicycle Wrong Way and Ride With Traffic signs applied (Source: Bike Pittsburgh)

DESCRIPTION

- Signs R5-1b "Bicycle Wrong Way " and R9-3cP "Ride With Traffic" are regulatory signs used to remind bicyclists that bicycles are vehicles and when operated on a roadway they should travel in the same direction as other roadway traffic (unless there is a contraflow lane).

BENEFITS

- Reinforces the law to both motorists and bicyclists that bicyclists may occupy the travel lane

CONSIDERATIONS

- Should be mounted back-to-back with other signs to reduce sign clutter and minimize visibility to other traffic

WHEN TO USE / TYPICAL APPLICATIONS

- For locations where wrong-way riding by bicyclists is frequently observed
- Sign R9-3cP "Ride With Traffic" should be used only in conjunction with and mounted directly below sign R9-3cP "Ride With Traffic"

Signage

SHARE THE ROAD Sign

MUTCD signs W11-1 and W16-1P

Example of a SHARE THE ROAD sign assembly applied in Atlantic Highlands, NJ

DESCRIPTION

- The "Share the Road" sign assembly is intended to alert motorists that bicyclists may be encountered and that they should be mindful and respectful of bicyclists.

BENEFITS

- Fast, inexpensive and effective way of educating bicyclists and motorists, leading ultimately to greater safety for all

CONSIDERATIONS

- The sign is not a substitute for design measures that can improve the quality of service for bicyclists.
- The sign says nothing about where on the road bicyclists are expected to ride.

WHEN TO USE / TYPICAL APPLICATIONS

- At the end of a bike lane, or where a shared use path ends
- In work zones where bicyclists may need to share a narrower space than usual
- The sign should not be used to address reported traffic operational issues, as the addition of this warning sign will not significantly improve bicycling conditions
- The sign should not be used to indicate a bike route

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Chapter 5

Implementation

Introduction

This chapter explains how the Pemberton Township Complete Streets policy can be effectively integrated into the normal course of business by addressing Complete Streets education, implementation tools (in the form of a series of checklists), and project development and delivery.

The Complete Streets policy, as presented in Chapter 2, specifies actions to be taken to support its implementation that recognize, integrate, accommodate, and balance the needs of all road users in all projects and make Complete Streets a routine part of everyday operations. These actions include providing design guidelines for Complete Streets implementation organized by roadway functional classification; establishing design standards for Complete Streets that are relevant and appropriate within the Township of Pemberton; and developing new or revising existing plans, codes, ordinances, procedures, rules, regulations, and evaluation standards including updating the *Pemberton Township Master Plan*. A listing of actions that should be taken is provided in Chapter 2.

Policy Implementation Priorities

The power of a Complete Streets policy to change the roadway environment and positively impact mobility for all users depends upon the quality of its implementation strategy and execution. Implementation of a Complete Streets policy varies widely by organization (municipality, county, state) and context (roadway conditions, traffic volumes, jurisdiction, transit, socioeconomics, etc.), yet successful implementation is known to include certain common components: (1) a thorough understanding and acceptance by staff, elected officials, and local stakeholders; (2) consistency with other policies, procedures, guidelines, and ordinances; and (3), a comprehensive and systematic relationship to administrative operations.

In Pemberton Township, a Complete Streets policy is a new platform for transportation decision making and action. Adopting that policy and integrating it into the administrative operations of Pemberton Township requires knowledge, understanding, and acceptance (buy-in) by staff, elected officials, and local stakeholders, and can require modification to existing administrative operations.

To achieve acceptance by staff, elected officials, and local stakeholders, some program of education and engagement must be provided that explains the Complete Streets policy, along with associated planning techniques, design elements, and approaches. For Pemberton Township, this effort will be supported through the *Complete Streets Design Guidelines* and Complete Streets training materials developed as part of this planning effort. The training materials include a customized version of a Complete Streets PowerPoint presentation, and hand-outs that can be used for Complete Streets presentations and workshops. The hand–outs are available for use as-needed by Township staff at street fairs or other community events staffed by Township transportation personnel.

To integrate the Complete Streets policy into the administrative operations of Pemberton Township, the policy should be deployed strategically in a way that is comprehensive and systematic, operating consistently within the normal course of business and affecting all aspects of transportation planning, design, maintenance, and operations. Implementation of the Complete Streets policy should be consistent with and supported by existing policies, procedures, guidelines, and ordinances and act as a resource to inform the future of each.

As part of this planning effort, a series of Complete Streets checklists has been developed for Pemberton Township to support a comprehensive and systematic Complete Streets implementation among the various departments operating within the Township. The checklists foster interdepartmental communication and address Complete Streets from the perspectives of planning, design, maintenance, and operations. The checklists should be utilized for all projects implemented by the Township and initiated at the earliest phase of project development so that all appropriate pedestrian, bicycle, transit, and motor vehicle elements can be incorporated into the project (and budget). Consistent and systematic application of the checklists will empower the Township's planners, engineers, maintenance staff, and contracted agents (including consultants and construction companies) to identify, design, construct, maintain, or operate a transportation network with that provides mobility for all users, consistent with the Complete Streets policy.

The checklists are interrelated and cover Complete Streets imperatives of concept development and design, maintenance and operations, resurfacing, and construction access. The checklists are designed to function within the project development and delivery structure described in the next section.

Project Development and Delivery

A key to Complete Streets implementation is the timely and effective translation of good policy intentions into real world improvements, which include capital projects, maintenance and operational procedures, resurfacing, and access considerations during construction or repair work. This is known as the project development and delivery process.

For Pemberton Township, an effective project development and delivery process must be explicit, directional, and critical. The process is explicit in that it is clearly and purposefully developed, communicated, and implemented throughout the Township. It is directional in that it encompasses a flow of communication from conception to completion. It is critical in that it subjects improvement concepts to scrutiny, review, revision, and/or approval by an appropriate body. The approving body may be a department within the Township, such as Community Development, or a Complete Streets Implementation (CSI) Committee with informed members from a cross section of departments (such as planning, engineering, public works, or code enforcement) and elected officials (such as planning board or council members). For the purposes of this discussion, the term CSI Committee will be used to identify the approving body within this workflow.

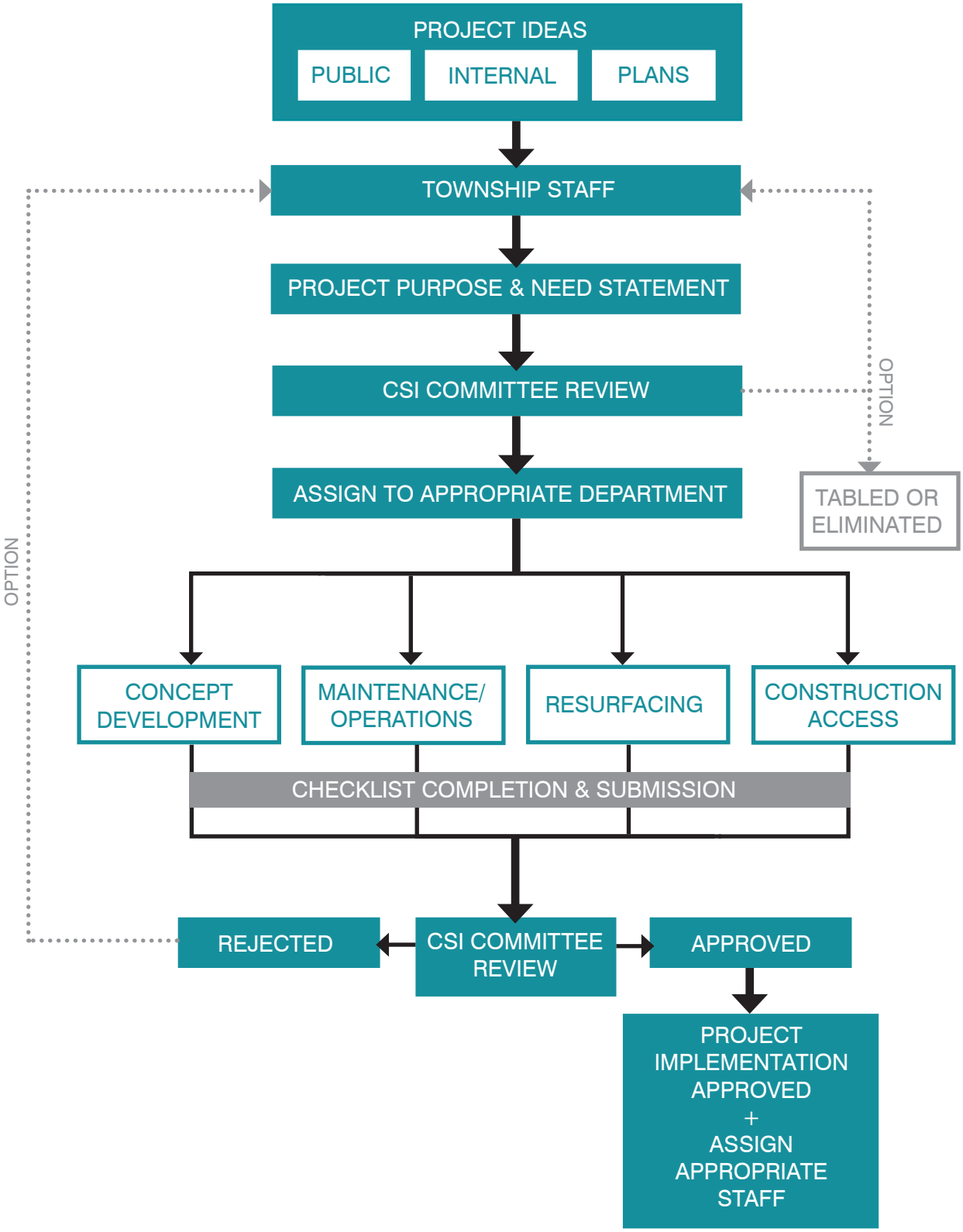
It is anticipated that the Township would receive Complete Streets project ideas from a variety of sources. These sources may include public input, staff input, formal planning efforts, and others.

To initiate the process, a project "purpose and need statement" would be completed by an initiator of the proposed project (either internal to the Township, or an external party with a vested interest). The project purpose and need statement describes the proposed project area, existing conditions, local context, the purpose for implementing a change within the project area, and the need for such change. Project ideas can be screened by appropriate Township staff to offer an initial assessment of validity prior to the preparation of a project purpose and need statement.

Once submitted, the project purpose and need statement is reviewed by the CSI Committee, and if approved, assigned to the appropriate Township department. Once assigned to appropriate department, the Complete Streets implementation checklists, which indicate whether the proposed work complies with the Complete Streets policy, are completed by the project manager and submitted for review to the CSI Committee.

If the project does not comply with the Complete Streets policy, the CSI Committee may reject the project or has the option to cycle it back to appropriate staff. If the project complies with Complete Streets policy, the CSI Committee may approve it for implementation, as assigned to appropriate staff. The pages that follow provide an example of a workflow diagram of the project development and delivery process and the related Complete Streets checklists.

COMPLETE STREETS PROJECT DEVELOPMENT WORKFLOW



COMPLETE STREETS CHECKLIST:

CONCEPT DEVELOPMENT AND DESIGN

For each question, please identify whether the Complete Streets consideration is currently addressed, not addressed, or not applicable and/or provide a description of how the item will be addressed for this proposed project. Attach any necessary documentation.

	Concept Development Checklist Consideration	YES	NO	N/A	Comments/ Explanation of How Item is being Addressed
Context	What is the existing roadway cross-section and speed limit?				
	What is the street type (refer to Pemberton Complete Streets Typology)? What is the AADT?				
	Is the project in a school zone, truck route, historic district, etc.?	☐	☐	☐	
	Is it a high accident area?	☐	☐	☐	
	Are there particular needs (pedestrian, children, elderly, bicyclists, motorist, transit, truck, or freight movement) in the project area?	☐	☐	☐	
	Are there any planning documents that address bicyclist, pedestrian, transit user, or freight movement facilities within or proximate to the study area?	☐	☐	☐	
	Are there safe and accessible accommodations for bicyclists to travel on, along, and across the current facility?	☐	☐	☐	
	Are there safe/accessible accommodations for pedestrians (including ADA compliance) to travel on, along, and across the current facility?	☐	☐	☐	
	Is there transit service (bus, rail, etc.) within the study area?	☐	☐	☐	
	Are there safe and accessible accommodations for transit users on, along, or crossing the current facility?	☐	☐	☐	
Proposed Complete Streets Accommodations	What is the proposed roadway cross-section and speed limit?				
	Does the proposed design follow all applicable and current design standards or guidelines, and best practices for bicycle and pedestrian facilities and ADA compatibility?	☐	☐	☐	
	Is the proposed design compatible with land use and density within the project area, including any special zoning districts?	☐	☐	☐	
	Does the proposed design accommodate the travel needs of all street users to the major sites, destinations, and trip generators within or proximate to the project area?	☐	☐	☐	
	Does the proposed design support recommendations from other planning documents related to the project area?	☐	☐	☐	
	Does the proposed design include landscaping, street trees, planters, buffer strips, or other environmental enhancements?	☐	☐	☐	
	Will bicycle, pedestrian, and transit users be accommodated along the facility? If yes, which of the following facilities will be included?	☐	☐	☐	
	☐ Accessible sidewalk curb ramps	☐ Crosswalks	☐ Pedestrian countdown signals	☐ Signs	☐ Shared lane markings
	☐ Curb extensions	☐ Pedestrian scale lighting	☐ Bike Lanes	☐ Bike compatible shoulders	☐ Other

CONCEPT DEVELOPMENT AND DESIGN SIGN-OFF

Concept Development Checklist Statement of Compliance	YES	NO
The selected design concept accommodates all users and is consistent with Complete Streets principles.	☐	☐
Note: There should be a "sign off" by whomever filled out the concept development checklist or that person's supervisor. Signature:_____		
If YES, forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. **If NO**, forward checklist to CSI Committee with documentation of any factors or circumstances exempting this project from Complete Streets policy compliance.		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must document its concurrence with the Statement of Compliance or, if an exemption is being sought, concur with the exemption before the project can advance to implementation. The CSI Committee may determine what additions or changes to the project must be incorporated before the project can advance to implementation.

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

COMPLETE STREETS CHECKLIST:

MAINTENANCE AND OPERATIONS

To be completed prior to the commencement of the work.

	Maintenance and Operations Checklist Consideration	YES	NO	N/A	Description of How the Item will be Addressed *(Required)*
Pedestrian Accommodations	Are there existing pedestrian accommodations in the vicinity of the work?	☐	☐	☐	
	Will pedestrian features be adversely affected during the course of maintenance work?	☐	☐	☐	
	If yes (above), will accommodation be restored or improved as a result of maintenance activity?	☐	☐	☐	
	Will pedestrian access be maintained or otherwise provided for during the course of the maintenance work?	☐	☐	☐	
Bicycle Accommodations	Are there existing bicycle accommodations in the vicinity of the work?	☐	☐	☐	
	Will bicycle features be adversely affected during the course of maintenance work?	☐	☐	☐	
	If yes (above), will accommodation be restored or improved as a result of the maintenance activity?				
	Will bicycle access be maintained or otherwise provided for during the course of the maintenance work?	☐	☐	☐	
Transit Access Accommodations	Are there existing transit access accommodations in the vicinity of the work?	☐	☐	☐	
	Will transit access features be adversely affected during the course of maintenance work?	☐	☐	☐	
	Will transit access be maintained or otherwise provided for during the course of the maintenance work?	☐	☐	☐	

MAINTENANCE AND OPERATIONS SIGN-OFF

Maintenance and Operations Checklist Statement of Compliance	YES	NO
The proposed maintenance work, including providing for maintenance of the traffic (as needed), accommodates all users and is in accordance with Complete Streets principles. Signature:_____	☐	☐
If YES, forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. **If NO**, forward checklist to CSI Committee with documentation of any factors or circumstances exempting this project from Complete Streets policy compliance.		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must document its concurrence with the Statement of Compliance or, if an exemption is being sought, concur with the exemption before the project can advance to implementation. The CSI Committee may determine what additions or changes to the project must be incorporated before the project can advance to implementation.

Signature: _____ **Date:** _____

Print Name:_____

Signature: _____ **Date:** _____

Print Name:_____

Signature: _____ **Date:** _____

Print Name:_____

COMPLETE STREETS CHECKLIST:

RESURFACING PROJECT

The purpose of this checklist is to ensure that all resurfacing projects incorporate the intent of the Pemberton Township Complete Streets Policy.

	Resurfacing Checklist Consideration	YES	NO	N/A	Comments
Context	Are there existing accommodations for bicyclists, pedestrians (including ADA) and transit users traveling on, along or across the existing facility?	☐	☐	☐	
	Are there planning documents that address bicycle, pedestrian or transit user conditions or needs proximate to the proposed resurfacing area?	☐	☐	☐	
	Does the current facility comply with ADA requirements for non-motorized travel?	☐	☐	☐	
	Is there a high incidence of bicycle or pedestrian crashes within the project limits?	☐	☐	☐	
	Have bicycle and pedestrian considerations been indentified with the project limits?	☐	☐	☐	
	Are there existing transit facilities within project limits (stops, stations, etc.)?	☐	☐	☐	
	Are there bicycle racks, shelters, or bike lockers available at existing land uses adjacent to the project?	☐	☐	☐	
	Are there street trees, planters, buffer strips or other environmental enhancements?	☐	☐	☐	
Proposed Accommodations	Does the proposed design accommodate bicycle travel along and across the facility?	☐	☐	☐	
	Does the proposed design accommodate pedestrians travel along and across the facility, including ADA compliance?	☐	☐	☐	
	Does the proposed design accommodate transit users in coordintation with the relevant transit authority?	☐	☐	☐	
	Does the proposed design protect and preserve landscaping, street trees, planters, buffer strips, or other environmental enhancements?	☐	☐	☐	
	During resurfacing, will safe access be maintained for all users, including pedestrians, bicyclists, transit users, and delivery vehicles?	☐	☐	☐	
	Does the proposed design worsen any bicycle or pedestrian facility? If yes, why?	☐	☐	☐	
	Are any of the following pedestrian, bicycle and transit facilities included? If yes, please identify which ones will be included.				
	☐ Accessible sidewalk curb ramps	☐ Crosswalks	☐ Pedestrian Countdown Signals	☐ Signs	☐ Shared lane markings
	☐ Curb extensions	☐ Pedestrian scale lighting	☐ Bike Lanes	☐ Bike compatible shoulders	☐ Other

COMPLETE STREETS IMPLEMENTATION COMMITTEE SIGN-OFF

Resurfacing Checklist Statement of Compliance	YES	NO
This resurfacing project accommodates all appropriate users consistent with its context. Signature:_____	☐	☐
If YES, forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. **If NO**, forward checklist to CSI Committee with documentation of any factors or circumstances exempting this project from Complete Streets policy compliance.		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must document its concurrence with the Statement of Compliance or, if an exemption is being sought, concur with the exemption before the project can advance to implementation. The CSI Committee may determine what additions or changes to the project must be incorporated before the project can advance to implementation.

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

COMPLETE STREETS CHECKLIST:

CONSTRUCTION ACCESS

For each question, please identify whether the Complete Streets consideration is currently addressed, not addressed, or not applicable and provide a description of how the item will be addressed. Attach any necessary documentation to support your answer.

	Construction Checklist Consideration	YES	NO	N/A	Explanation of How the Item will be Addressed
Maintenance of access	During construction, will safe access be maintained for all users, including pedestrians, bicyclists, transit users, and delivery vehicles?	☐	☐		
Detour Routes	Will detour routes for all users on site or nearby be provided and clearly marked, including advanced warning signs?	☐	☐		

CONSTRUCTION PROJECT MANAGER SIGN-OFF

Construction Checklist Statement of Compliance	YES	NO
The Construction Traffic Plan accommodates all users. Signature: _____	☐	☐
If YES, forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. **If NO**, forward checklist to CSI Committee with documentation of any factors or circumstances exempting this project from Complete Streets policy compliance.		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must document its concurrence with the Statement of Compliance or, if an exemption is being sought, concur with the exemption before the project can advance to implementation. The CSI Committee may determine what additions or changes to the project must be incorporated before the project can advance to implementation.

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

END OF REPORT