

PHILADELPHIA

COMPLETE STREETS DESIGN HANDBOOK

2017



MAYOR'S OFFICE OF TRANSPORTATION
AND UTILITIES



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LETTER FROM THE DEPUTY MAYOR



Philadelphia has nearly 3,000 miles of streets, and every day Philadelphians use them to walk, drive, bike, or ride transit. Some streets were first built in the 1600's and others laid down in the 1950's. Our streets come in a diversity of widths and serve a variety of different purposes and neighborhoods.

Public streets are one of the most valuable assets a city has. The competition for the use of the public way is constant and varied. From serving emergency vehicles to automobiles, from accommodating pedestrians to delivery trucks, from bicyclists to buses, the management of these vital and constantly changing spaces is crucial and needs to be balanced in order to minimize congestion and maximize safety.

No matter when the pavement was first laid down, it is our responsibility to ensure that our streets serve the needs of all Philadelphians today and in the future. In 2009, Mayor Michael Nutter issued an executive order, ensuring that the City's streets would accommodate "all users of the transportation system, be they pedestrians, bicyclists, public transit users, or motor vehicle drivers." In doing so he made a promise that all of the City's streets would be designed, built, and maintained as "Complete Streets." I am excited to present this *Complete Streets Design Handbook* as a fulfillment of this promise. The Handbook builds on decades of work by the Streets Department and the Planning Commission to make Philadelphia's streets and transportation system safe and efficient. The Handbook incorporates the Street Type Classification System outlined in the Planning Commission's *Pedestrian and Bicycle Plan*, as well as design features already implemented by the Streets Department. The *Complete Streets Design Handbook* represents best practices in street design from Philadelphia and other major cities.

The Handbook is a tool box and guide for community groups looking to improve their neighborhood streets, developers looking to build a new project, and for City employees designing a new street to meet 21st Century transportation standards. Every Philadelphian deserves streets that improve their life by providing safe, convenient, and efficient transportation choices. I urge you to use the Handbook to become an advocate for better streets and increased mobility choices.

A handwritten signature in black ink that reads "Rina Cutler". The signature is fluid and cursive, with the first name "Rina" and last name "Cutler" clearly distinguishable.

Rina Cutler

Philadelphia Deputy Mayor for Transportation and Utilities

ACKNOWLEDGEMENTS

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GUIDE TO GOVERNMENT AGENCIES AND ABBREVIATIONS

STATE AGENCIES

Pennsylvania Department of Environmental Protection	PADEP
Pennsylvania Department of Transportation	PennDOT
Pennsylvania Historical and Museum Commission	PHMC
Pennsylvania Public Utility Commission	PAPUC

REGIONAL AGENCIES

Delaware Valley Regional Planning Commission	DVRPC
Southeastern Pennsylvania Transportation Authority	SEPTA

CITY AGENCIES

Mayor's Office of Sustainability	MOS
Mayor's Office of Transportation and Utilities	MOTU
Office of Housing and Community Development	OHCD
Philadelphia's City Council	PCC
Philadelphia City Planning Commission	PCPC
Philadelphia Department of Commerce	Commerce
Philadelphia Department of Licenses and Inspections	L&I
Philadelphia Department of Public Health	PDPH
Philadelphia Gas Works	PGW
Philadelphia Historical Commission	PHC
Philadelphia Housing Authority	PHA
Philadelphia Parking Authority	PPA
Philadelphia Parks and Recreation Department	PPR
Philadelphia Police Department	Police
Philadelphia Streets Department	Streets

Philadelphia Streets Department Right of Way Unit	ROW
Philadelphia Water Department	PWD
Redevelopment Authority of Philadelphia	RDA
School District of Philadelphia	SDP
Zoning Board of Adjustment	ZBA
Zoning Code Commission	ZCC

QUASI-GOVERNMENT AGENCIES

Delaware River City Corporation	DRCC
Delaware River Port Authority	DRPA
Delaware River Waterfront Corporation	DRWC
Philadelphia Cultural Fund	PCF
Philadelphia Industrial Development Corporation	PIDC
Philadelphia Regional Port Authority	PRPA
Schuylkill River Development Corporation	SRDC

OTHER ABBREVIATIONS

American Association of State Highway Organizations	AASHTO
Manual on Uniform Traffic Control Devices	MUTCD
Americans with Disabilities Act	ADA
Public Right-of-Way Accessibility Guidelines	PROWAG

TABLE OF CONTENTS

1.0 Introduction	9
1.1 How to Use the Complete Streets Handbook.....	10
1.1.1 Components of Complete Streets.....	12
1.1.2 Design Treatment Suitability Matrix.....	13
1.2 Purpose & Background.....	17
1.2.1 State & Federal Policy Context.....	17
1.2.2 Local Policy Context	18
1.2.3 Concurrent Projects	19
1.3 Why Does Philadelphia Need Complete Streets?	20
1.3.1 Complete Streets Principles.....	20
2.0 Philadelphia's Street Planning and Design Process.....	25
2.1 Overview of Philadelphia's Street Planning and Design Process	25
2.1.1 Street Construction, Reconstruction, & Development Projects.....	25
2.1.2 Street Improvements & Sidewalk Encroachments	26
2.2 Who's Involved?	27
3.0 Philadelphia Street Types	33
3.1 High-Volume Pedestrian.....	40
3.2 Civic/Ceremonial Street	42
3.3 Walkable Commercial Corridor	44
3.4 Urban Arterial	46
3.5 Auto-Oriented Commercial/Industrial	48
3.6 Park Road	50

3.7 Scenic Drive.....	52
3.8 City Neighborhood Street.....	54
3.9 Low-Density Residential	56
3.10 Shared Narrow	58
3.11 Local	60

4.0 Complete Streets Components and Design Treatments	65
4.1 Overview of Complete Street Components	65
4.2 Overview of Design Treatment Application & Suitability	67
4.3 Pedestrian Component.....	69
4.3.1 Sidewalk Width.....	71
4.3.2 Walking Zone Width	72
4.3.3 Curb Ramps	73
4.3.4 Shared/Pedestrian Priority Streets	74
4.3.5 Festival (Curbless) Street.....	75
4.4 Building & Furnishing Component.....	77
4.4.1 Building Zone Width.....	79
4.4.2 Furnishing Zone Width.....	80
4.4.3 Bicycle Parking	81
4.4.4 Lighting.....	82
4.4.5 Benches & Street Furniture	83
4.4.6 Sidewalk Cafes	84
4.4.7 State Trees & Tree Trenches.....	85
4.4.8 Planters.....	88
4.4.9 Stormwater Planters.....	89

4.4.10 Trash Bins & Honor Boxes	90	4.7.4 Chicanes.....	121
4.4.11 Newsstands	91	4.7.5 Bus Lanes	122
4.4.12 Vendors	92	4.8 Urban Design Component.....	123
4.4.13 Architectural Features	93	4.8.1 Driveways	124
4.5 Bicycle Component	95	4.8.2 Utilities	126
4.5.1 Conventional Bike Lanes.....	96	4.8.3 Construction Disruption	127
4.5.2 Left-side Bike Lanes	97	4.8.4 Stormwater Management.....	128
4.5.3 Buffered Bike Lanes	98	4.9 Intersection & Crossing Component.....	129
4.5.4 Contra-flow Bike Lanes.....	99	4.9.1 Marked Crosswalks	132
4.5.5 Climbing Bike Lanes	100	4.9.2 Uncontrolled Crossings	134
4.5.6 Cycle Tracks.....	101	4.9.3 Curb/Corner Radii.....	136
4.5.7 Shared-use Path	102	4.9.4 Curb Extensions	137
4.5.8 Bicycle-friendly Streets.....	103	4.9.5 Pedestrian Refuge Islands	139
4.5.9 Marked Shared Lanes.....	104	4.9.6 Signal Timing & Operations	141
4.5.10 Green Colored Pavement	105	4.9.7 Pedestrian Hybrid Beacons.....	143
4.5.11 Bike Route Signs	106	4.9.8 Rectangular Rapid Flashing Beacons	144
4.6 Curbside Management Component	107	4.9.9 Bicycle Signals	145
4.6.1 On-street Parking	108	4.9.10 Bike Boxes	146
4.6.2 In-street Bicycle Parking.....	110	4.9.11 Raised Crossings.....	147
4.6.3 Lay-by Lanes.....	112	4.9.12 Two-stage Left Turn Queue Boxes.....	148
4.6.4 Loading Zones	113	4.9.13 Traffic Diverters	149
4.6.5 Transit Stops & Shelters.....	114	4.9.14 Neighborhood Traffic Circles	150
4.6.6 Alternative Uses of Parking Lanes	115	4.9.15 Roundabouts	151
4.7 Vehicle/Cartway Component.....	117	5.0 Implementation and Enforcement	155
4.7.1 Lane Width	118	5.1 Complete Streets Checklist	156
4.7.2 Raised Speed Reducers	119	5.2 Parking Curb Definition and Enforcement.....	161
4.7.3 Medians.....	120		



INTRODUCTION

SECTION 01



PHILADELPHIA'S COMPLETE STREETS EXECUTIVE ORDER (NO. 5-09 - ESTABLISHMENT OF A COMPLETE STREETS POLICY)

WHEREAS, road and sidewalk space is a limited public good that must be shared by public transit service, pedestrians, taxicabs, bicycles, personal, emergency, commercial and utility vehicles, parked vehicles, sidewalk vending and cafes, bicycle racks, newsstands, bus stops and shelters, newspaper boxes and planters, among other things; and

WHEREAS, increasing public transit use, walking and bicycling offers the potential for a healthier citizenry, cleaner air, reduced traffic congestion, more livable neighborhoods, less reliance on fossil fuels and imported sources of energy, and more efficient use of road space and resources;

NOW THEREFORE, I, Michael Nutter, by the authority vested in me by the Philadelphia Home Rule Charter, do hereby order as follows:

Section 1. COMPLETE STREETS POLICY

All City departments and agencies shall, in connection with input into and decisions regarding all transportation and development projects:

- A. Give full consideration to accommodation of the safety and convenience of all users of the transportation system, be they pedestrians, bicyclists, public transit users, or motor vehicle drivers;*
- B. Balance the needs of all users in planning, design, construction, maintenance, and operation; and*
- C. Prioritize the safety of those traveling in the public right of way, and in particular the safety of children, the elderly, and persons with disabilities. Such efforts shall be known as the City's "Complete Streets Policy."*

Section 2. IMPLEMENTATION OF COMPLETE STREETS

All departments shall make the Complete Streets Policy an integral part of their planning and programming wherever practicable. Examples of how the Complete Streets Policy may be implemented include, but are not limited to:

- A. Use of good geometric design and features such as median refuges and curb extensions (bumpouts) in connection with streetscape design, in order to minimize crossing distances and increase visibility between pedestrians and motorists;*
- B. Timing of traffic signals to minimize pedestrian delay & conflicts;*
- C. Discouraging limited pull-off lanes, driveways, and obstructions that narrow sidewalks to the detriment of a comfortable pedestrian environment;*
- D. Promotion of an expanded and improved bicycle network, including bike lanes, off-road trails, and bicycle parking at automobile parking facilities;*
- E. Reviewing motor vehicle traffic lanes to determine whether additional space for other lower-impact uses could be reasonably accommodated;*
- F. Improving the rights-of-way in compliance with ADA accessibility guidelines; and*
- G. Addressing the needs of bicycles, pedestrians, and public transit, as well as automobiles, when authorizing street and sidewalk closures for construction projects.*

DATE June 4, 2009

1.1 HOW TO USE THE COMPLETE STREETS HANDBOOK

The Philadelphia Complete Streets Design Handbook should be used by City and State agency staff, design professionals, private developers, community groups, and others involved in the planning and design of streets in Philadelphia. The Handbook will inform all projects that impact the public right-of-way in Philadelphia, including construction of new streets and improvements to existing streets. Streets Department will review projects for consistency with the Handbook. The guidance in this Handbook does NOT establish strict standards and does not supersede any existing federal, state, or city laws, rules, or regulations. All projects remain subject to relevant statutes, reviews, and approvals.

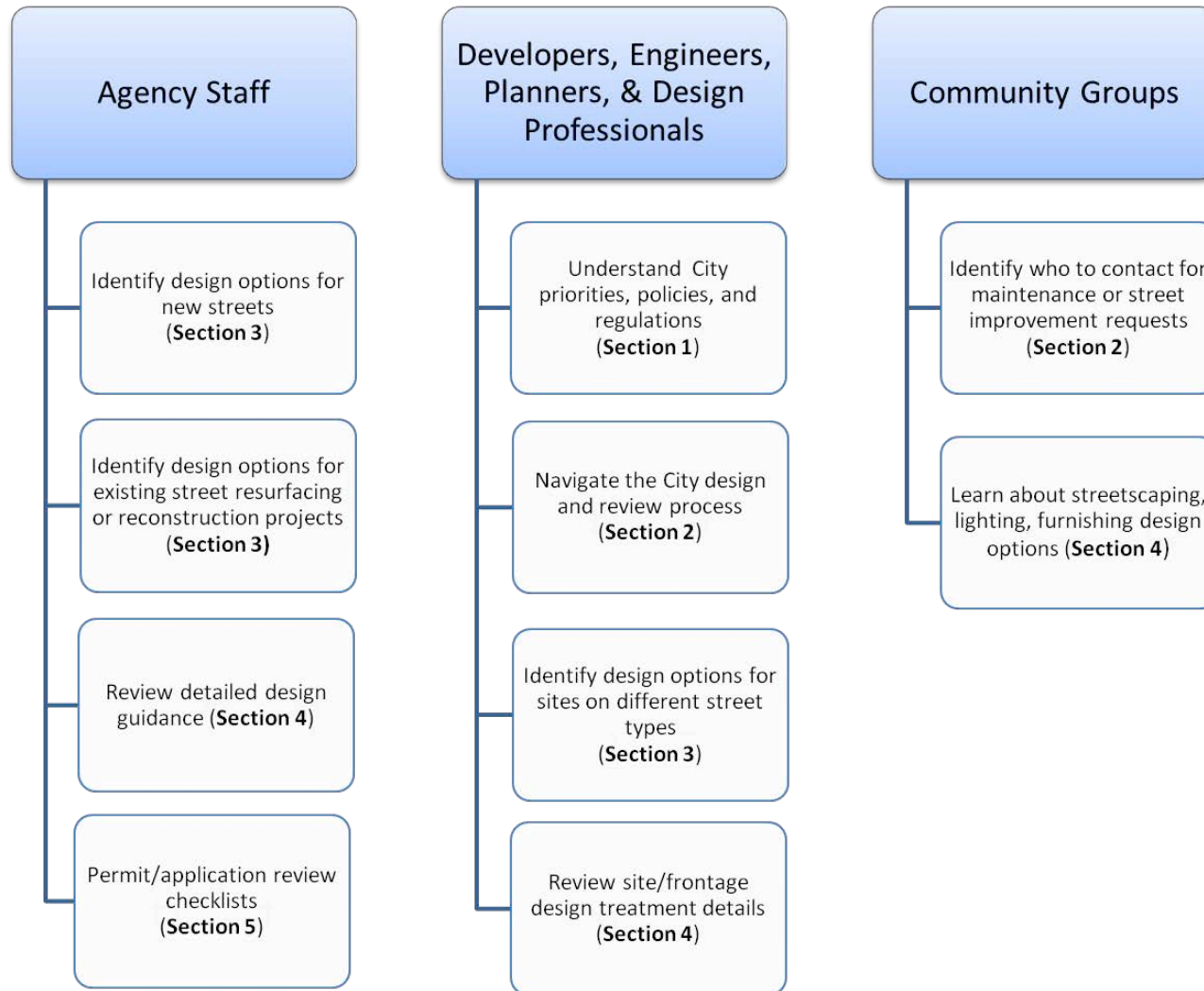
The Handbook is divided into five sections:

- **Section 1 – Introduction**
Overview of the Handbook, complete streets principles, and related documents.
- **Section 2 - Philadelphia's Street Planning and Design Process**
Overview of Philadelphia's street planning and design process and agency responsibilities.
- **Section 3 - Philadelphia Street Types**
Description of the street types established in the *Philadelphia Pedestrian and Bicycle Plan*, map of street type designations, and summary of appropriate design treatments for each street type.
- **Section 4 - Complete Streets Components and Design Guidance**
Introduction to the components of complete streets, design fundamentals, and a “toolbox” of design treatment to enhance safety, mobility, access, and vitality.
- **Section 5 – Implementation and Enforcement**
Provides complete streets project review checklists for a variety of applications.

To use this document to arrive at a preferred street design, follow the steps illustrated in below:



The Handbook is intended to provide resources for a variety of users and applications. The diagram below identifies the relevant section(s) of the Handbook where various users can locate information for common applications.

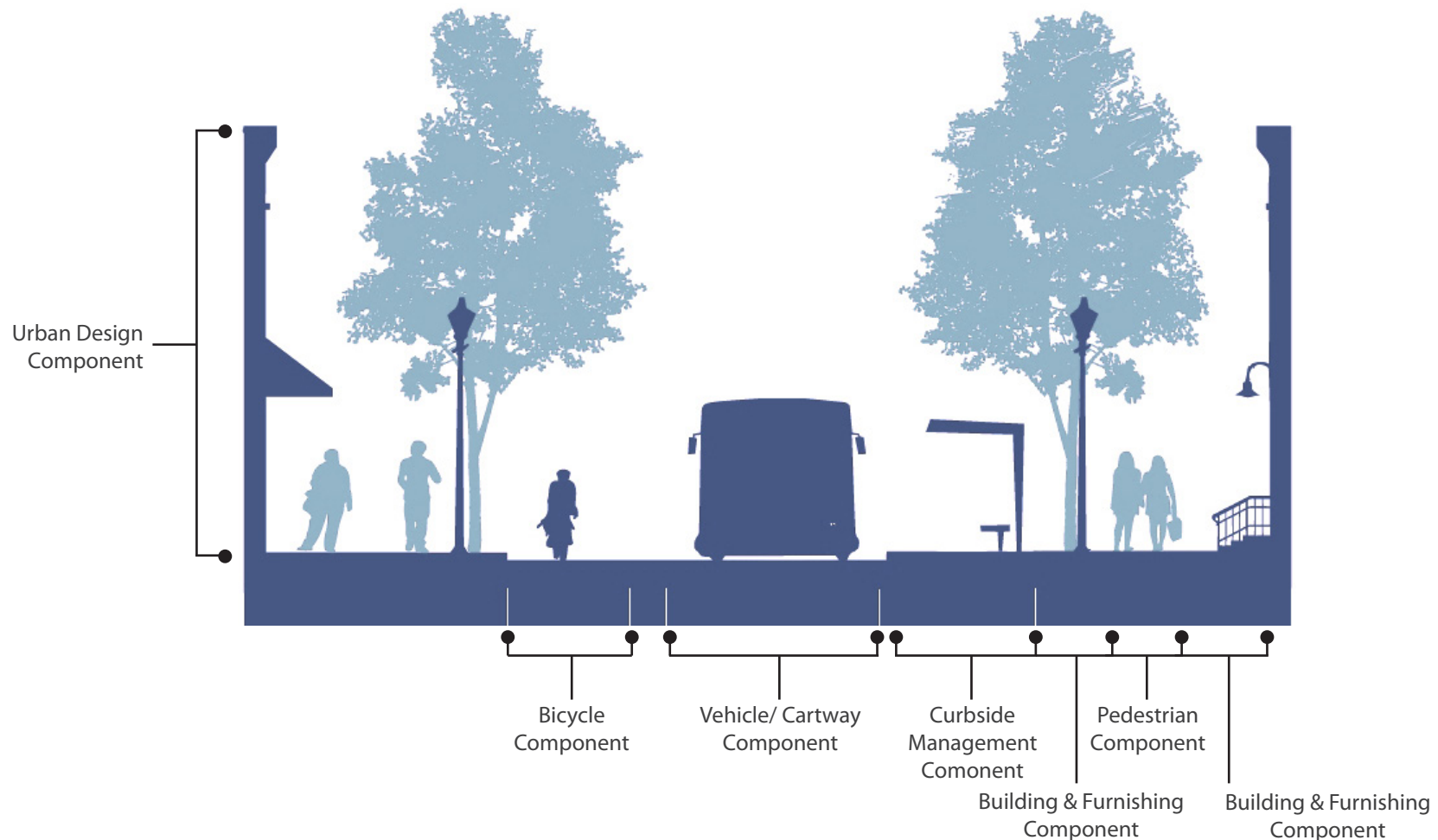


Note: Many of the design treatments in this Handbook are identified as “Green Infrastructure Opportunities,” meaning they can be designed to help manage stormwater runoff and reduce the environmental impact of streets. For more detailed design guidance on green street infrastructure, please review PWD’s Green Streets Design Manual.

1.1.1 COMPONENTS OF COMPLETE STREETS

Complete streets design considers the interaction of many different roadway users, elements of street design, and surrounding land uses. To ensure that each of these elements are considered during street project design, the *Philadelphia Complete Streets Design Handbook* identifies seven conceptual complete street “components” that make up the public right-of-way: Pedestrian (see Section 4.3); Building & Furnishing (see Section 4.4); Bicycle (see Section 4.5); Curbside Management (see Section 4.6); Vehicle/Cartway (see Section 4.7); Urban Design (see Section 4.8); and Intersections & Crossings (see Section 4.8). The figure below illustrates the approximate locations within the right-of-way that are

addressed by each of these components. Throughout the Handbook, these components are used to ease identification of design treatments that are appropriate for different types of projects and different street types. Section 4 of this Handbook presents an overview of each complete street component, including design “fundamentals,” relevant policies, responsible parties, and resources for more information. Detailed design guidance for different treatments within each component of the right-of-way is also provided in Section 4. Appropriate design treatments for different street types and components are also summarized in the Design Treatment Suitability Matrix (Section 1.1.2) and Section 3.





1.1.2 DESIGN TREATMENT SUITABILITY MATRIX

Tables 1 and **2** summarize the suitability of various design treatments for application on different types of streets and intersections in Philadelphia. Additional information about each street type and design treatment is provided in Sections 3 and 4 of this Handbook, respectively. For each street and intersection type, design treatments are classified into five categories:

- **Required** – These design treatments must be incorporated into all street improvement projects on designated street types.
- **High Priority** – These design treatments should be incorporated into all street improvement projects on designated street types if adequate clear sidewalk width can be maintained in compliance with ADA requirements and *Philadelphia Pedestrian and Bicycle Plan* guidelines.
- **Low Priority** – These design treatments should be considered for incorporation into all street improvement projects on designated street types if adequate clear sidewalk width can be maintained in compliance with ADA requirements and *Philadelphia Pedestrian and Bicycle Plan* guidelines. Additional consideration should be given to how the design treatment complements the surrounding context and desired function of the street.
- **Appropriate in Limited Circumstances** – These design treatments may be incorporated into street improvement projects on designated street types in a limited number of circumstances, such as locations near schools, transit stops, trails, or other non-auto-oriented trip generators.
- **Not Recommended** – These design treatments are generally not recommended for use on designated street types due to space constraints, safety concerns, or incompatibility with surrounding uses or the desired function of the street.

PennDOT approval and/or consultation must be obtained for all design treatments on state highways or facilities.

Table 1 - Street Segment Design Matrix

Street Component (See Section 4)	Design Treatment (See Section 4)	Street Type (see Section 3)										
		3.1 High-Volume Pedestrian	3.2 Civic/Ceremonial Street	3.3 Walkable Commercial Corridor	3.4 Urban Arterial	3.5 Auto-Oriented Commercial/ Industrial	3.6 Park Road	3.7 Scenic Drive	3.8 City Neighborhood	3.9 Low-Density Residential	3.10 Shared Narrow	3.11 Local
4.3 Pedestrian	4.3.1 Sidewalk Width	≥16'	≥20'	≥12'	≥12'	≥12'	≥8'	≥9'	≥12'	≥10'		≥10'
	4.3.2 Walking Zone Width	≥8'	≥10'	≥6'	≥6'	≥6'	≥5'	≥6'	≥6'	≥5'	≥5'	≥5'
	4.3.3 Curb Ramps	●	●	●	●	●	●	●	●	●	●	●
	4.3.4 Shared/Pedestrian Priority Street	-	-	-	-	-	-	-	○	○	■	○
	4.3.5 Festival (Curbless) Street	○	○	○	○	-	○	○	○	○	○	○
4.4 Building & Furnishing	4.4.1 Building Zone Width	No minimum requirement										
	4.4.2 Furnishing Zone Width	≥4'	≥5'	≥4'	≥4'	≥5'	3-5'	3-5'	≥4'	≥3.5'	-	≥3.5'
	4.4.3 Bicycle Parking	■	●	■	■	□	□	■	○	○	-	○
	4.4.4 Lighting	■	■	■	■	□	□	□	■	□	□	□
	4.4.5 Benches & Street Furniture	□	■	■	□	○	□	□	○	○	-	○
	4.4.6 Sidewalk Cafes	○	□	□	○	○	○	○	○	○	-	○
	4.4.7 Street Trees	■	■	■	■	■	■	■	■	■	■	■
	4.4.8 Planters	□	□	□	○	○	○	○	○	○	○	○
	4.4.9 Stormwater Planters	□	□	□	□	□	□	□	□	□	□	□
	4.4.10 Trash Bins, Honor Boxes, Etc.	■	■	■	□	□	□	□	○	○	-	○
	4.4.11 Newsstands	○	□	□	□	-	-	-	○	-	-	-
	4.4.12 Vendors	○	○	○	○	○	○	○	○	-	-	○
	4.4.13 Architectural Features	○	○	○	○	○	-	-	○	○	○	-

Legend

- Required
- High Priority (Include if width permits)
- Low Priority (Should be considered)
- Appropriate in Limited Circumstances
- Not Recommended

Table 1 - Street Segment Design Matrix (Cont.)

Street Component (See Section 4)	Design Treatment (See Section 4)	Street Type (see Section 3)										
		3.1 High-Volume Pedestrian	3.2 Civic/Ceremonial Street	3.3 Walkable Commercial Corridor	3.4 Urban Arterial	3.5 Auto-Oriented Commercial/ Industrial	3.6 Park Road	3.7 Scenic Drive	3.8 City Neighborhood	3.9 Low-Density Residential	3.10 Shared Narrow	3.11 Local
4.5 Bicycle	4.5.1 Conventional Bike Lane	■	■	■	■	□	■	■	□	●	-	●
	4.5.2 Left-Side Bike Lane	May be considered on one-way streets serving transit where bike lanes are appropriate										
	4.5.3 Buffered Bike Lane	□	□	□	□	■	□	□	●	-	-	-
	4.5.4 Contra-Flow Bike Lane	Consider on one-way streets where alternate route is unsafe or excessively long										
	4.5.5 Climbing Bike Lane	Consider on streets with steep grades where bike lanes or marked shared lanes are appropriate										
	4.5.6 Cycle Track	●	●	●	□	●	-	●	●	-	-	-
	4.5.7 Shared-Use Path	-	-	-	●	●	□	□	-	-	-	-
	4.5.8 Bicycle-Friendly Street	●	-	●	-	-	●	-	■	■	□	■
	4.5.9 Marked Shared Lane	□	-	□	●	-	●	●	□	●	-	●
	4.5.10 Green Colored Pavement	●	●	●	●	●	●	●	●	-	-	-
	4.5.11 Bike Route Signs	■	■	■	■	■	■	■	■	□	●	●
4.6 Curbside Management	4.6.1 On-Street Parking	■	■	■	□	□	●	●	■	□	-	□
	4.6.2 In-Street Bicycle Parking	□	●	□	●	-	●	●	●	-	-	-
	4.6.3 Lay-By Lanes	●	●	●	●	-	-	-	-	-	-	-
	4.6.4 Loading Zones	■	■	■	□	□	●	●	■	□	-	□
	4.6.5 Transit Stops	■	■	■	■	■	□	□	■	□	-	●
	4.6.6 Alternative Uses of Parking Lanes	●	●	●	●	●	●	●	●	●	-	●
4.7 Cartway/ Vehicle	4.7.1 Lane Width	see guidelines										
	4.7.2 Raised Speed Reducers	●	-	●	-	-	□	-	●	●	-	□
	4.7.3 Medians	□	□	□	■	■	□	□	●	●	-	-
	4.7.4 Chicanes	-	-	●	-	-	●	-	●	●	-	●
	4.7.5 Bus Lanes	●	●	●	●	●	-	-	-	-	-	-
4.8 Urban Design	4.8.1 Driveways	see guidelines										
	4.8.2 Utilities	see guidelines										
	4.8.3 Construction Disruption	see guidelines										
	4.8.4 Stormwater Management	●	●	●	●	●	●	●	●	●	●	●

Intersection design is highly dependent upon the context of the individual intersection, including its geometry, surrounding land uses, speed and volume of traffic at each approach, turning movements, and the desired function of the intersection within the street network. The type of traffic control (e.g., signalized, two- or all-way stop controlled, roundabout) at an intersection also informs the types of appropriate design treatments. **Table 2** summarizes the suitability of

various design treatments for application on different types of intersections in Philadelphia. Additional information about each design treatment is provided in Section 4.9 of this Handbook. For the purposes of this Handbook, “major” streets are generally considered to be streets with a functional classification of freeway, collector, or arterial. Coordination with PennDOT is necessary for intersections involving state facilities or ramps to/from state highways.

Table 2 - Street Design Matrix

Design Treatment (See Section 4)		Traffic Control	Major/Major	Local/Major	Local/Local	Complex Geometry (>4 legs, skewed, etc.)
4.9.1	Marked Crosswalks	All	■	■	■	■
4.9.2	Uncontrolled Crossings	None	see guidelines			
4.9.3	Curb/Corner Radii	All	see guidelines			
4.9.4	Curb Extensions	All	○	□	□	□
4.9.5	Pedestrian Refuge Islands	All	■	□	○	■
4.9.6	Signal Timing and Operations	Signalized	■	■	■	■
4.9.7	Pedestrian Hybrid Beacon (HAWK)	Unsignalized	-	○	-	○
4.9.8	Bicycle Signals	Signalized	see guidelines			
4.9.9	Rectangular Rapid Flash Beacon (RRFB)	Unsignalized	see guidelines			
4.9.10	Bike Boxes	Signalized	■	□	○	□
4.9.11	Raised Crossings	All	-	○	○	○
4.9.12	Two-Stage Left Turn Queue Boxes	Signalized	□	○	○	□
4.9.13	Traffic Diverters	All	-	○	○	○
4.9.14	Neighborhood Traffic Circles	Unsignalized	-	-	○	-
4.9.15	Roundabouts	Unsignalized	○	○	-	○

Legend

- Required
- High Priority (Include if geometry permits)
- Low Priority (Should be considered)
- Appropriate in Limited Circumstances
- Not Recommended

1.2 PURPOSE & BACKGROUND

In June 2009, Mayor Nutter issued the Complete Streets Executive Order, requiring all City departments and agencies to balance the needs of pedestrians, bicyclists, public transit users, and motorists when making decisions regarding the transportation system and development projects. The Order places a high priority on increasing safety and convenience for those traveling in the public right-of-way, particularly children, the elderly, and persons with disabilities. The Philadelphia Complete Streets Design Handbook provides City agencies, design professionals, private developers, and community groups the design guidance necessary to implement the Complete Streets Executive Order. The Handbook will inform all changes to the public right-of-way in Philadelphia, including construction of new streets and improvements to existing streets. The Handbook will also promote more efficient project implementation by serving as a comprehensive resource to guide Streets Department review of all projects within the public right-of-way.



The Philadelphia Complete Streets Design Handbook illustrates preferred multi-modal street design and management practices within the City of Philadelphia and provides project review checklists to ensure these designs and practices are applied to City streets. The Handbook catalogues existing local policies and design standards related to design of streets, sidewalks, intersections, and other facilities in the public right-of-way. It also provides recommended policies and practices where they did not previously exist. All design treatments presented in this Handbook have been tailored to the unique needs and dimensions of Philadelphia streets and provide flexibility for adaptation to local contexts. The Handbook encourages the use of engineering judgment and provides flexibility for adaptation of designs to specific conditions; however, the guidelines contained in this document should be followed wherever practicable to create a street environment that promotes safety, comfort, and access for all users. All designs remain subject to case-by-case Streets Department approval based on established engineering standards and professional judgment.

The Philadelphia Complete Streets Design Handbook was developed through a collaborative effort led by the Mayor's Office of Transportation and Utilities (MOTU) and a Steering Committee including the Pennsylvania Department of Transportation (PennDOT), Philadelphia Water Department (PWD), Philadelphia City Planning Commission (PCPC), SEPTA, Delaware Valley Regional Planning Commission (DVRPC), Center City District, and University City District. Community groups, business organizations, developers, and other stakeholders were also engaged in development of the Handbook through interviews, focus groups, and reviewing draft content.

1.2.1 STATE AND FEDERAL POLICY CONTEXT

*The Philadelphia Complete Streets Design Handbook is intended to supplement rather than replace existing engineering and design standards, including but not limited to the *Manual on Uniform Traffic Control Devices* (MUTCD). Some of the design treatments described in this Handbook are not directly referenced in the current editions of these documents, but best practices are provided based on*

these treatments' use in Pennsylvania, nationally, and/or internationally. The U.S. Access Board's *Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way* and other Americans with Disabilities Act (ADA) design standards are addressed as a component of most design treatments in the Handbook. All modifications to the public right-of-way and applications of the design guidance in this Handbook should consider accessibility for disabled Philadelphia residents, workers, and visitors.

At the State level, the Handbook supports the *Smart Transportation Guidebook*, published in March 2008, through a partnership between PennDOT and the New Jersey Department of Transportation. The Guidebook presents policies and design guidance for rural, suburban, and urban streets in Pennsylvania, with the goal of integrating the planning and design of our transportation system in a manner that fosters development of sustainable and livable communities.

1.2.2 LOCAL POLICY CONTEXT

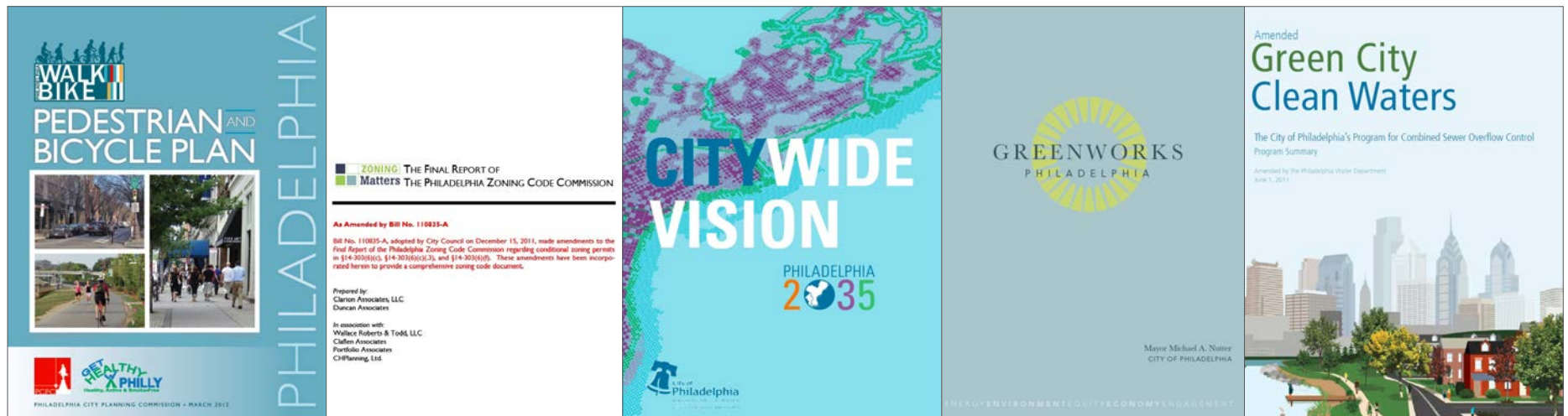
The *Philadelphia Complete Streets Design Handbook* builds on and supports several major City policy and planning initiatives, including:

- **Philadelphia Pedestrian and Bicycle Plan** – This Plan, completed in April 2012, identifies policies, programs, and implementation strategies to increase walking and bicycling in the City by improving the connectivity, safety, convenience, and attractiveness of pedestrian and bicycle networks. The Plan also presents a street classification system with design standards for sidewalks that reflects the interplay between roadway function, pedestrian activity, and adjacent land use. *This Handbook builds upon the classification system and sidewalk standards established in the Pedestrian and Bicycle Plan.*
- **Philadelphia 2035** – The *2035 Comprehensive Plan* is part of an integrated planning and zoning process. Organized around three major themes – Thrive, Connect, and Renew – the Plan includes a long-range citywide plan and 18 strategic district plans. The *Philadelphia 2035 District Plans* are “in process” and will be for the next several years, but the larger citywide document was completed in June 2011. *This Handbook provides design options that will support implementation of the 2035 citywide vision and district plans.*
- **Philadelphia Zoning Code Commission Report** – The Zoning Code Commission's revision of the Zoning Code was adopted by City Council in December 2011. The new zoning classifications follow the land-use and transportation goals, principles, and recommendations of the Comprehensive Plan. *This Handbook builds upon the new Zoning Code's standards for new streets and provides recommendations for improving the interface between the public right-of-way and surrounding land uses.*
- **Greenworks Philadelphia** – Released by the Mayor's Office of Sustainability in April 2009, *Greenworks Philadelphia* sets 15 targets to make Philadelphia the greenest city in the United States by 2015. Together, they are intended to reduce the City's vulnerability to rising energy prices, limit its environmental footprint, and reposition its workforce and job development strategies to build on Philadelphia's competitive advantages in the emerging green economy. *This Handbook was identified as a task to complete the Greenworks initiative and provides design options that will support achievement of the Greenworks targets.*
- **Green City, Clean Waters (Stormwater Management Plan)** – This Plan, developed by the Philadelphia Water Department (PWD), identifies strategies for dealing with rainwater through “green infrastructure” (e.g., rain gardens, green roofs, porous pavement, planted curb extensions, vegetated parking-lot swales, street trees) to avoid the cost of boring large stormwater tunnels or greatly expanding sewage plants to hold overflow for subsequent treatment. *This Handbook incorporates PWD's recommendations and identifies opportunities to incorporate green infrastructure into street improvements that also serve pedestrians, bicyclists, and transit users.*

1.2.3 CONCURRENT PROJECTS

The *Philadelphia Complete Streets Design Handbook* was developed concurrently with two additional documents that will impact the design of Philadelphia's streets and multimodal facilities in the future:

- Green Streets Design Manual** – This manual, currently under development by the Philadelphia Water Department, provides design guidance for “green infrastructure” stormwater management features currently being implemented or considered on Philadelphia's streets. Design treatments addressed include: stormwater curb extensions, tree trenches, stormwater planters, rain gardens, permeable paving, green gutters, and other innovative treatments. For each treatment, the manual provides a typical design and discussion of benefits, constraints, and other design issues. For more information, go to: www.phillywatersheds.org.
 - SEPTA Transit Stop Design Standards** – This guide, currently being developed jointly by SEPTA and DVRPC, will provide a consistent set of standards for designing surface transit stops in Philadelphia and the surrounding region. The guidelines will address four primary aspects of transit stop design: stop location (placement relative to other stops, intersections, and development), in-street design (street space allocated for transit vehicle operation), curbside design (space reserved for passengers to wait for and board transit vehicles), and passenger amenities (e.g., shelters, lighting, seating). For more information, go to: www.septa.org.
- These design manuals will serve as companion documents to the *Philadelphia Complete Streets Design Handbook* and have been developed in coordination to avoid duplicative or conflicting guidance. Although this Handbook addresses many design issues and treatments related to green infrastructure and transit facilities, readers will be directed to these documents for more detailed guidance on these issues wherever appropriate.



1.3 WHY DOES PHILADELPHIA NEED COMPLETE STREETS?

“Complete streets are streets for everyone. They are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street. Complete streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.”

- Complete Streets Coalition

Philadelphia's streets have historically served many functions. Many of the City's streets were originally designed in the early twentieth century to serve horses, carriages, and pedestrians. These streets served important civic, cultural, and economic functions for Philadelphians, housing public markets, parade routes, plazas, and venues for socializing in addition to facilitating travel and movement of goods. As personal and freight transportation became more focused on motor vehicles over time, however, street designs also evolved to focus primarily on facilitating efficient movement of cars and trucks.

This focus created benefits as well as challenges for the City. In some areas, streets were constructed or expanded without accommodations for non-motorized modes or transit, creating an unwelcoming or unsafe environment for pedestrians and bicyclists with limited transportation options. Additional impacts include pollution, increased stormwater runoff from ever-widening roadways, and decreased opportunities for social and physical activity on streets. In other

areas, widening narrow streets to accommodate increasing vehicle traffic has proven difficult or impossible without disturbing existing neighborhoods and historic buildings.

Complete streets design represent a return to the historic, multi-faceted role of streets in Philadelphia. The *Philadelphia Complete Streets Design Handbook* presents an updated approach to street design drawing from the recent experiences of New York City, San Francisco, and other peer communities' efforts to create a transportation network that promotes community vitality and provides safe, convenient options for motorists, pedestrians, bicyclists, transit users, and freight carriers. This approach also considers the role of Philadelphia's streets in achieving citywide goals beyond transportation and mobility, such as improved public health, environmental quality, quality of life, and economic development. This Handbook provides City staff, community organizations, developers, and others the tools needed to make our city's streets better.

1.3.1 COMPLETE STREETS PRINCIPLES

This Handbook contains guidance on a wide range of street design treatments and provides flexibility for the designer to adapt to the diverse contexts found throughout Philadelphia. Complete streets come in many shapes and forms, but adhere to the following overarching complete streets principles:

- **Design to accommodate all users** – Complete streets provide appropriate space for all street users to coexist. Street design should accommodate pedestrians, bicyclists, transit users, automobiles, and commercial vehicles. (For additional information on transit stop design, see the SEPTA *Transit Stop Design Standards Guide*.)
- **Design for safety** – The safety of all street users, especially the most vulnerable users (children, the elderly, and disabled) and modes (pedestrians and bicyclists) should be paramount in any street design. The safety of streets can be dramatically improved through appropriate geometric design and operations.

- **Prioritize pedestrian movement** – Complete streets are built to pedestrian scale and privilege pedestrian movements, recognizing the critical role pedestrians play in urban vitality and because all trips include a pedestrian component (e.g., walking to/from parking, transit).
- **Complement surrounding land uses, environment, and community** – Complete streets respect the surrounding built and natural environment. Well-designed streets promote travel speeds, modes, and sidewalk activities that are desired and appropriate for the surrounding context.
- **Incorporate green design** – Complete streets should incorporate green infrastructure such as street trees and stormwater curb extensions wherever practicable to simultaneously improve the pedestrian environment and mitigate the environmental impact of runoff and other transportation impacts. (For additional information on green streets and stormwater design, see the PWD *Green Street Design Guide*.)
- **Create public spaces** – Complete streets promote streets as public spaces and incorporate designs to maximize social and economic activity.



DESIGN PRIORITIES FOR MULTIPLE ROADWAY USERS



Pedestrian Design Priorities

1. Accessible curb ramps
2. Ample, unobstructed walkways
3. Safe, visible crossings
4. Public plazas and street-level activities
5. Pedestrian-scale lighting & urban design
6. Streetscaping and green space



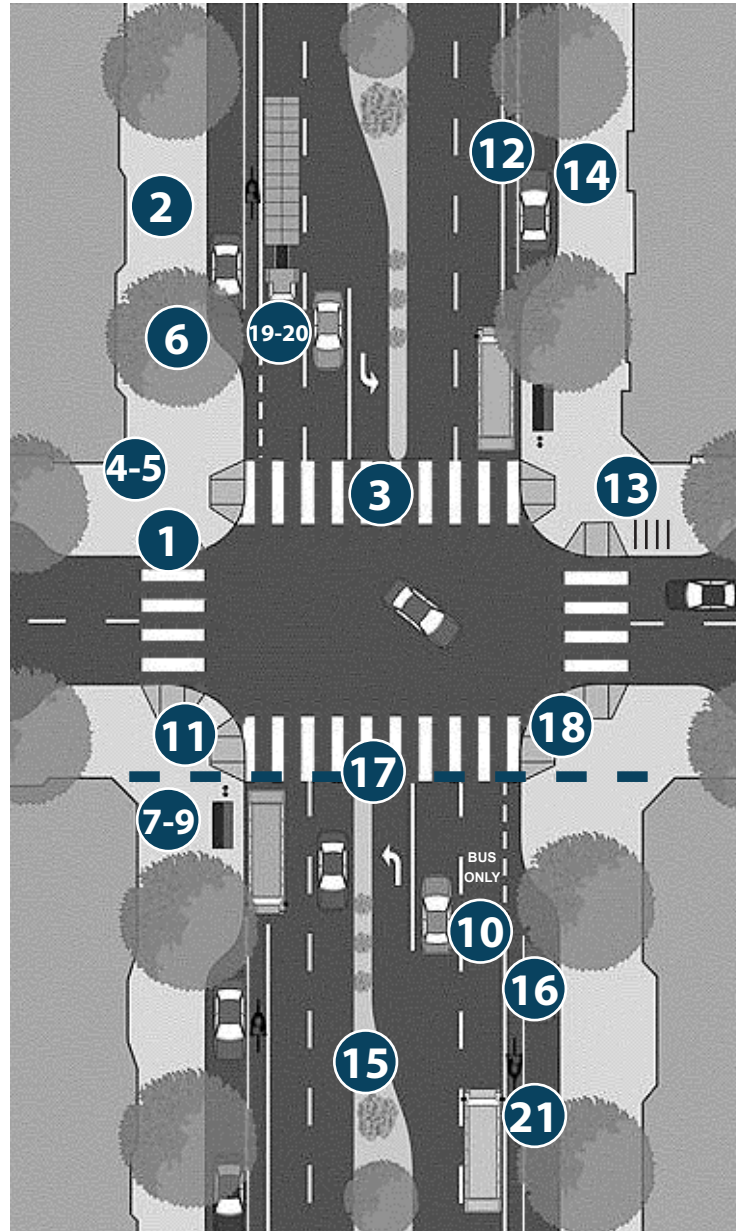
Transit Design Priorities

7. Convenient pedestrian access to stops
8. Connections to surrounding destinations
9. Safe, secure waiting areas with passenger amenities
10. In-road facilities to increase service speed and reliability
11. Adequate curb radii



Bicycle Design Priorities

12. Safe designated facilities
13. Ample, secure bike parking
14. Connected, well-marked network



Automobile Design Priorities

15. Appropriate design speed (traffic calming)
16. Parking management
17. Appropriate distribution of road space



Freight and Emergency

Services Design Priorities

18. Adequate curb radii
19. Adequate lane width
20. Designated routes without disturbances
21. Loading zones

PHILADELPHIA'S STREET PLANNING & DESIGN PROCESS

SECTION 02

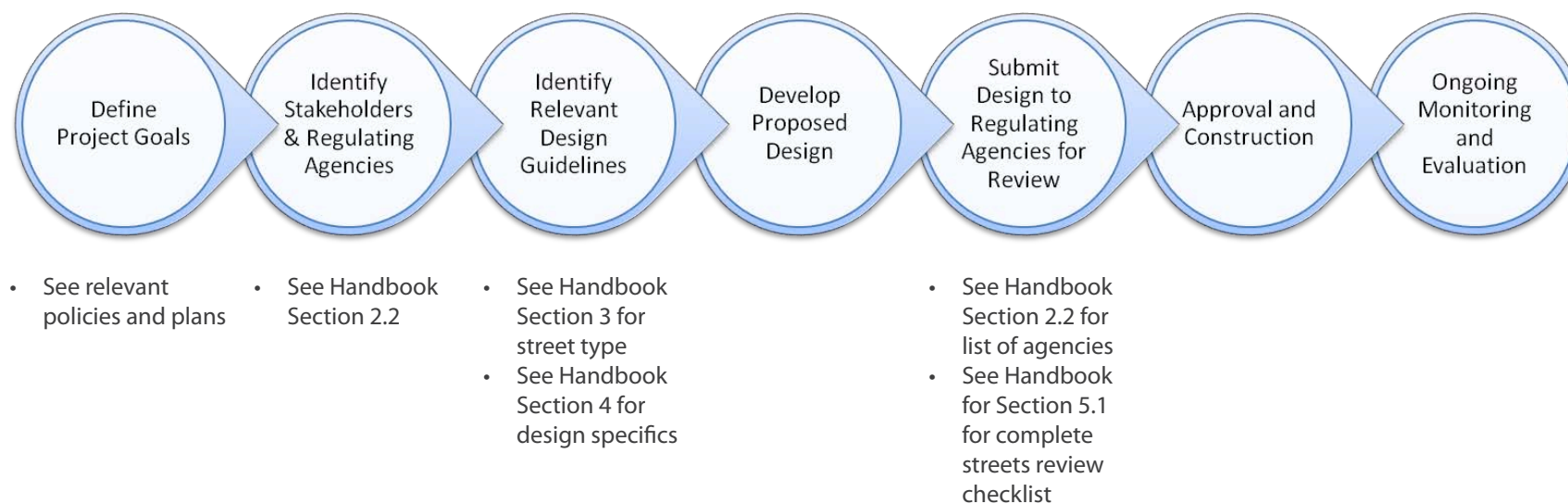


2.1 OVERVIEW OF PHILADELPHIA'S STREET PLANNING AND DESIGN PROCESS

The process of planning, designing, operating, and maintaining high-quality streets requires consideration of many interconnected elements of the urban environment and involves many actors. This section provides a brief overview of the larger planning and design process that street design follows and how the *Philadelphia Complete Streets Design Handbook* fits into that process. It also identifies the various agencies and partners involved in the street planning and design process, and their specific roles and responsibilities.

2.1.1 STREET CONSTRUCTION, RECONSTRUCTION, AND DEVELOPMENT PROJECTS

The Philadelphia Complete Streets Design Handbook provides guidance for the design of new streets and improvements to existing streets, including resurfacing, reconstruction, or changes associated with development outside the public right-of-way. The planning and design process varies slightly for each of these different project types, but generally follows a similar framework. The flow chart below illustrates the planning and design process that most street improvement projects follow and how the Handbook fits into this process.



2.1.2 STREET IMPROVEMENTS AND SIDEWALK ENCROACHMENTS

The Handbook also provides information for community groups, residents, and business owners on the permitting process and design standards for minor improvements within the public right-of-way such as benches, bicycle racks, and sidewalk cafes. These types of improvements can help to create a sense of place and increase the attractiveness of streets for pedestrians and cyclists, but also encroach on the sidewalk and can create obstructions for pedestrians as well as potential maintenance or liability issues. As a result, these improvements must be reviewed and permitted by a City agency or allowed through passing of a Council ordinance. Once compliance with Handbook recommendations is established and approval is received, project sponsors must identify funding to purchase, install, and maintain improvements. The following section identifies the agencies responsible for permitting various minor street improvements. Section 4 of this Handbook provides design guidelines for many minor street improvements and directs readers to specific resources for more information.

SIDEWALK ENCROACHMENTS – THE PERMITTING & ORDINANCE PROCESSES

The Philadelphia Code regulates what types of improvements that encroach on the sidewalk may be permitted by City agencies. All encroachments addressed in the Code must be approved by the Streets Department Right-of-Way Unit (ROW) prior to Department of Licenses and Inspections (L&I) zoning variance approval, building permit approval, or license issuance. All other improvements may only be made to the public right-of-way through an ordinance of the City Council.

Approved Encroachments:

Require Streets Dept. ROW Unit approval, but no additional permit or license

- Bicycle racks
- Planters (Center City District only)

Permitted Encroachments:

May be licensed or allowed as part of a Zoning Variance or Building Permit by L&I after approval by Streets Dept. ROW Unit

- **Require Zoning Variance or Building Permit:**
 - Awnings or canopies
 - Steps or wheelchair lifts/ramps
 - Balconies
 - Bay windows
 - Cellar doors and vaults
- **Require License:**
 - Licensed dumpsters (not roll-off type)
 - Newsstands
 - Sidewalk cafes

Prohibited Encroachments:

Are not allowed in the right-of-way under the Philadelphia Code without an ordinance from City Council

- Benches
- Art or architectural embellishments (e.g., gates, sculptures)
- Building additions of any kind
- Enclosed sidewalk cafes
- Planters (outside Center City District)
- Fences or retaining walls

2.2 WHO'S INVOLVED?

The following are agencies and other organizations that are frequently involved in the creation, review, and approval of elements of street design in Philadelphia. This list is provided as a reference tool, for informational purposes and is not an exhaustive list. A Lane Closure Permit must also be obtained from the Streets Department Right-of-Way Unit in order to perform any work within the right-of-way.



- **District Councilperson** By established tradition, only the district councilperson can introduce an ordinance to alter a street or rezone a parcel in his or her district.
- **City Council** must approve any ordinance for a street change. Under the Home Rule Charter, City Council must approve the laying, striking, or redesign of any street.
- **Mayor** must sign any ordinance for a street change after approved by Council.

- **Zoning Board of Adjustment (ZBA)** must hear all variance requests. Very few administrative adjustments are allowed (see list of permitted encroachments on previous page).
- **Mayor's Office of Transportation and Utilities (MOTU)** is responsible for coordinating all street improvements and houses the Philadelphia Streets Department.
- **Streets Department** is responsible for permitting alterations to the public right-of-way by private property owners; engineering roadway and bridge improvements; designing traffic controls including signals, signs, and pavement markings; and maintaining roadways, bridges, traffic controls and street lights (including plowing and salting)
 - **Right-of-Way Unit** issues approvals for all encroachments into the right-of-way. All permits to open, break, or tunnel any street must be approved by the Streets Department Right-of-Way Unit.
 - **Board of Surveyors** must approve any new streets, street dimension changes, or street location changes. The unit also prepares ordinances for proposed streets and paving for City Council approval.
 - **Highway Division** carries out street construction, reconstruction, and maintenance activities.
 - **Traffic Division** approves all curb cuts and driveways more than 20' wide and all parking facilities with more than two spaces.
 - **Committee of Highway Supervisors** is composed of utility, Streets Department, and Planning Commission representatives. Per Title 11 of the Philadelphia Code, permits for opening, breaking, or tunneling any street must be obtained from Licenses & Inspections after approval is obtained from Department of Streets and the department in charge of affected underground services.
- **Licenses & Inspections** determines zoning restrictions, conducts inspections, approves/denies zoning and building permits, and inspects stormwater systems based upon Plumbing Code standards. Philadelphia Home Rule Charter gives L&I responsibility for the review, issuance, and

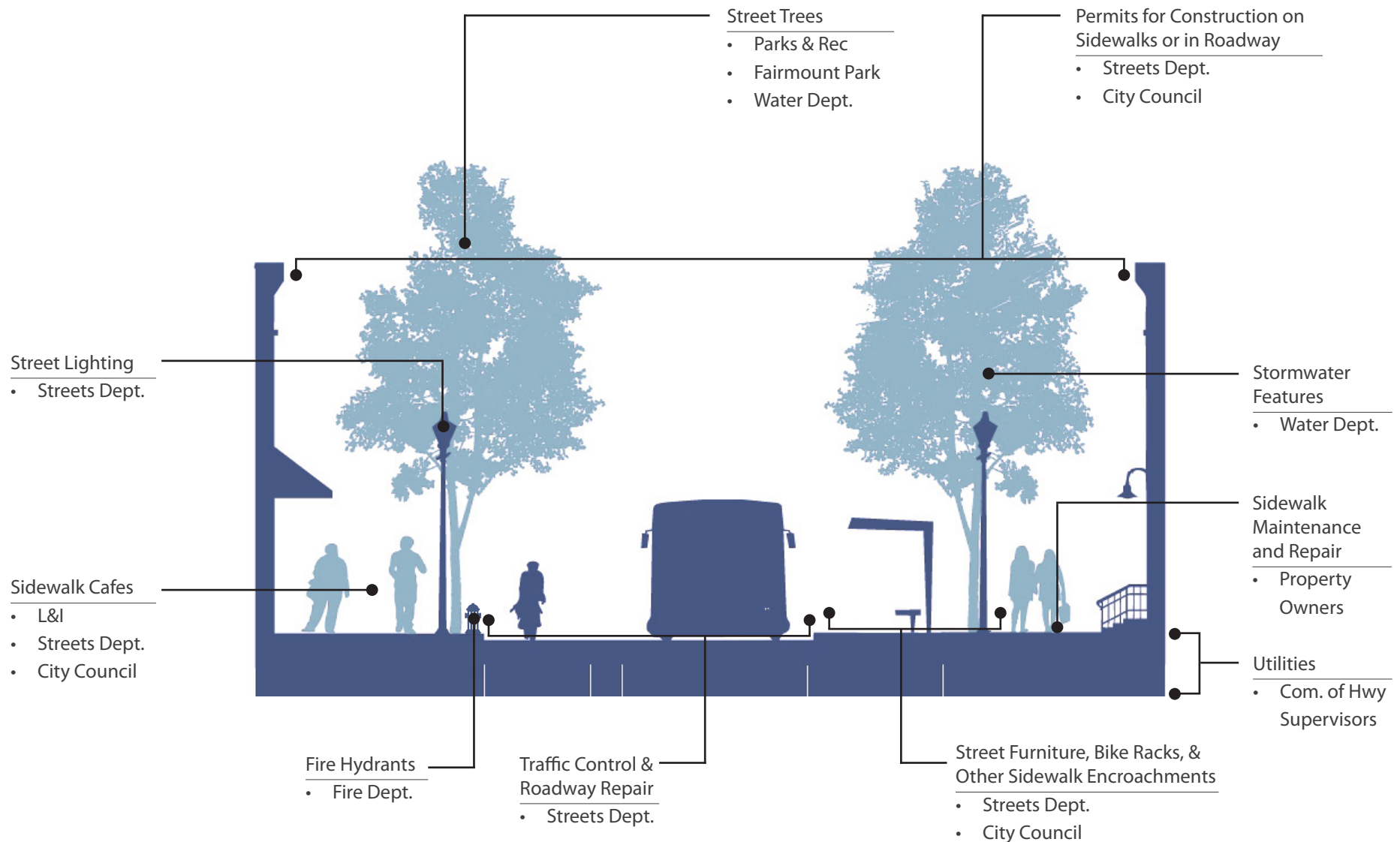
inspection of every permit or license required by the City of Philadelphia. Per Title 11 of the Philadelphia Code, permits for opening, breaking, or tunneling any street for water, sewer, and stormwater connections must be obtained from L&I after approval is obtained from Department of Streets and the department in charge of affected underground services.

- **Planning Commission** provides plat review and approval for subdivisions. Reviews Streets bills (changes to lines and grades), Property bills (acquisition and sales), changes to the Zoning Code, public development proposals, and all development plans that require variances. Performs facade reviews where required by Zoning Code. Planning Commission developed the *Philadelphia Pedestrian and Bicycle Plan* and is responsible for integrating proposed changes to ped/bike networks into development proposals and neighborhood or district level planning efforts.
- **PennDOT** must approve changes to a street if it is also a state highway (typically PennDOT is only involved in ADA and right-of-way dimension changes).
- **Water Department** creates specifications for all stormwater detention and retention systems and conducts percolation standards testing based on their own specifications. PWD will review green stormwater infrastructure improvements in accordance with the process outlined in the *Green Streets Manual*.
- **Developers** construct any new streets and sidewalks. May request permission for driveways, lay-bys, and/or sidewalk encroachments.
- **Parks and Recreation and Fairmount Park Commission** set street tree requirements, supervise street tree installation, and maintain street trees and landscaping within parks properties. Section 14-2104(13) of Philadelphia Code requires street trees be planned in all residential and apartment house subdivisions, including land abutting any street previously opened.
- **Accessibility Advisory Board** reviews designs for appeals on requirements for handicapped accessibility.
- **Fire Department** if new streets are required, Fire Department must approve location of fire hydrants on new streets.

- **Community Groups** may have maintenance responsibilities and can testify during the design review process,
- **Developer Services Team** this informal group of management personnel from the Office of Housing and Neighborhood Preservation, Planning Commission, L&I, Streets Department, and Water Department can be engaged to meet early in the design process to review and comment on plans.
- **Art Commission** must approve any awnings, signs, or other encroachments on the public right-of-way.
- **Center City District** owns and maintains pedestrian lighting, street trees, signage, trash bins, and other streetscape elements in select areas.



The diagram below illustrates the roles and responsibilities of city agencies and other entities related to the most visible aspects of the City's streets. It does not include all agencies with street design review, approval, construction, or maintenance roles and is not intended to be a literal representation of appropriate street furniture locations.



PHILADELPHIA STREET TYPES

SECTION 03



Good complete street design takes into account the differing conditions and contexts of each street. Streets with different surrounding land uses, constraints, and significance for different modes require different design considerations and treatments.

The Philadelphia Pedestrian and Bicycle Plan established a new street classification that considers the functional roadway classification, land-use characteristics, development density, and pedestrian activity level of streets. The new street types are intended to inform planning decisions when altering existing streets and sidewalks and when reviewing new streets and sidewalks as part of development projects. The classification is not intended to replace the City's functional classification system, but provides a more context-sensitive classification to aid in the planning and design of complete streets that provide appropriate accommodations for all roadway users.

The eleven street types addressed in this plan are:

- High-Volume Pedestrian (section 3.1)
- Civic/Ceremonial Street (section 3.2)
- Walkable Commercial Corridor (section 3.3)
- Urban Arterial (section 3.4)
- Auto-Oriented Commercial/Industrial (section 3.5)
- Park Road (section 3.6)
- Scenic Drive (section 3.7)
- City Neighborhood (section 3.8)
- Low-Density Residential (section 3.9)
- Shared Narrow (section 3.10)
- Local (section 3.11)

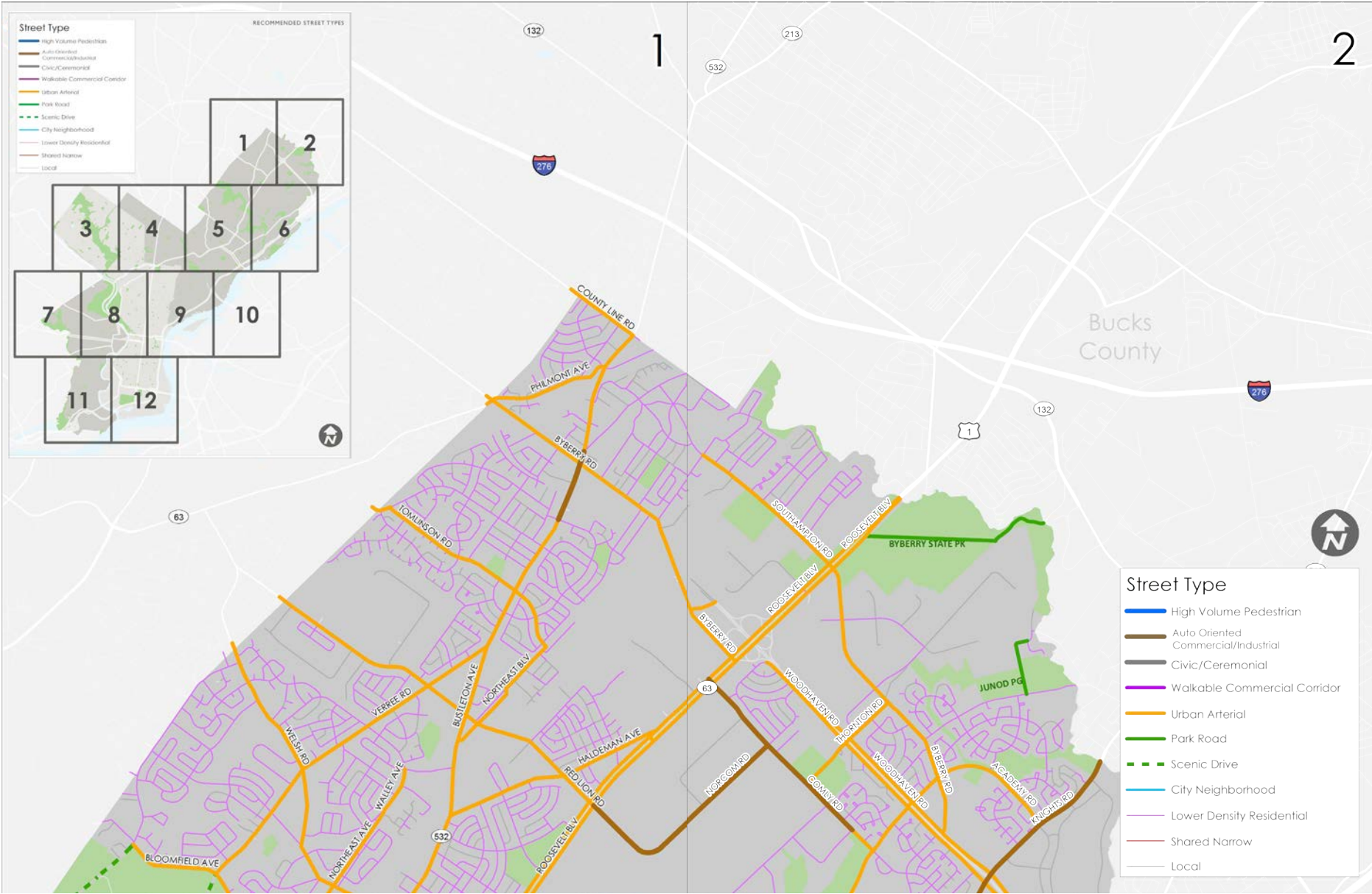
A street's type may change from one block to another, but streetscape improvements should be implemented to provide consistent design along routes and smooth transitions from one street type to another. When identifying design treatments, the ultimate role of the street should be considered as well as its current function. On some streets, traffic calming or other design improvements may be necessary to alter the function of the street. For all street types,

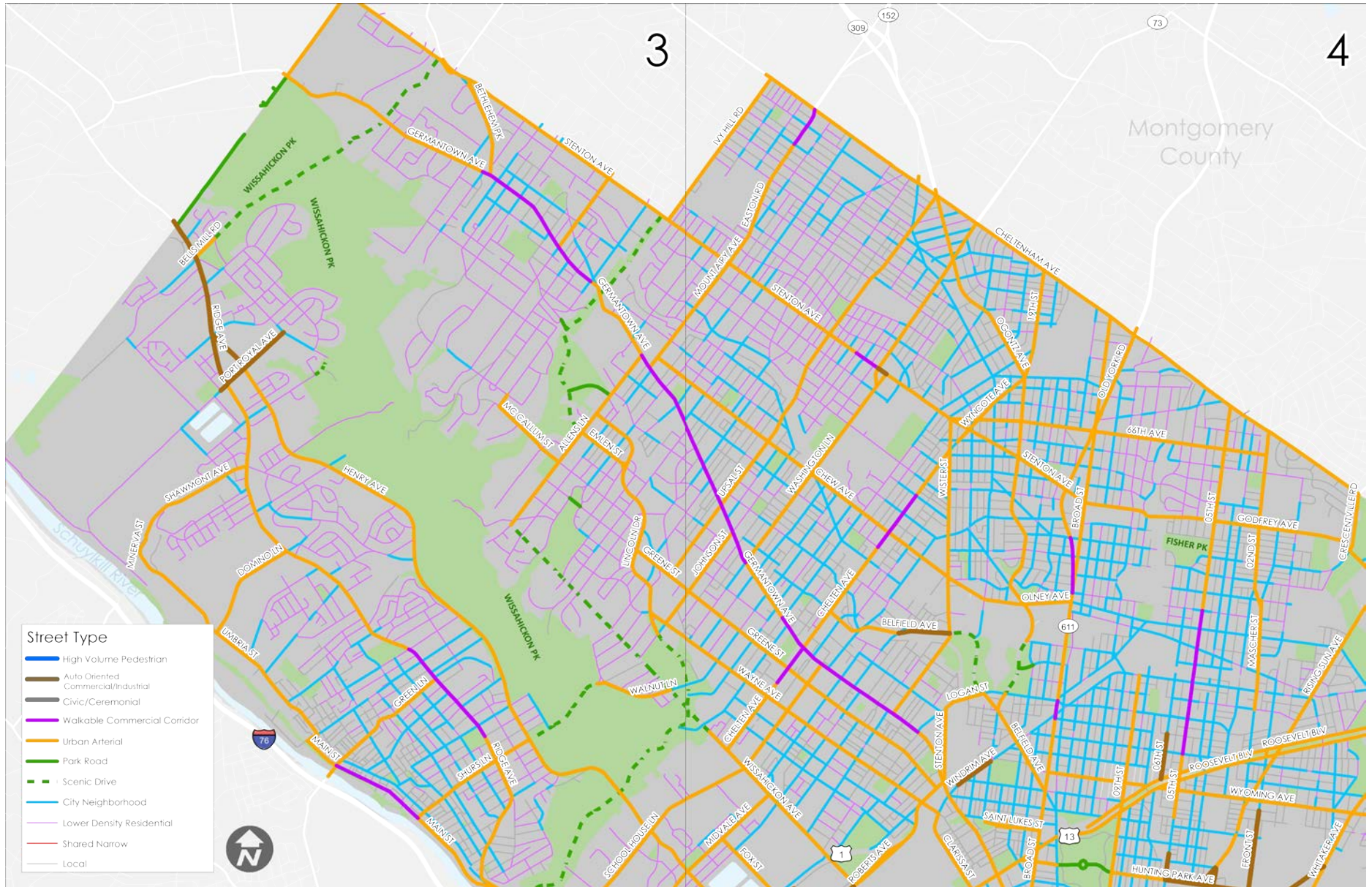
additional special roles or designations of streets should be considered when determining appropriate design treatments. Special roles and designations may include: priority transit, freight, or emergency service routes; streets of particular cultural, historic, or ecological significance, or streets that serve large numbers of vulnerable roadway users (e.g., near schools, senior housing, or parks).

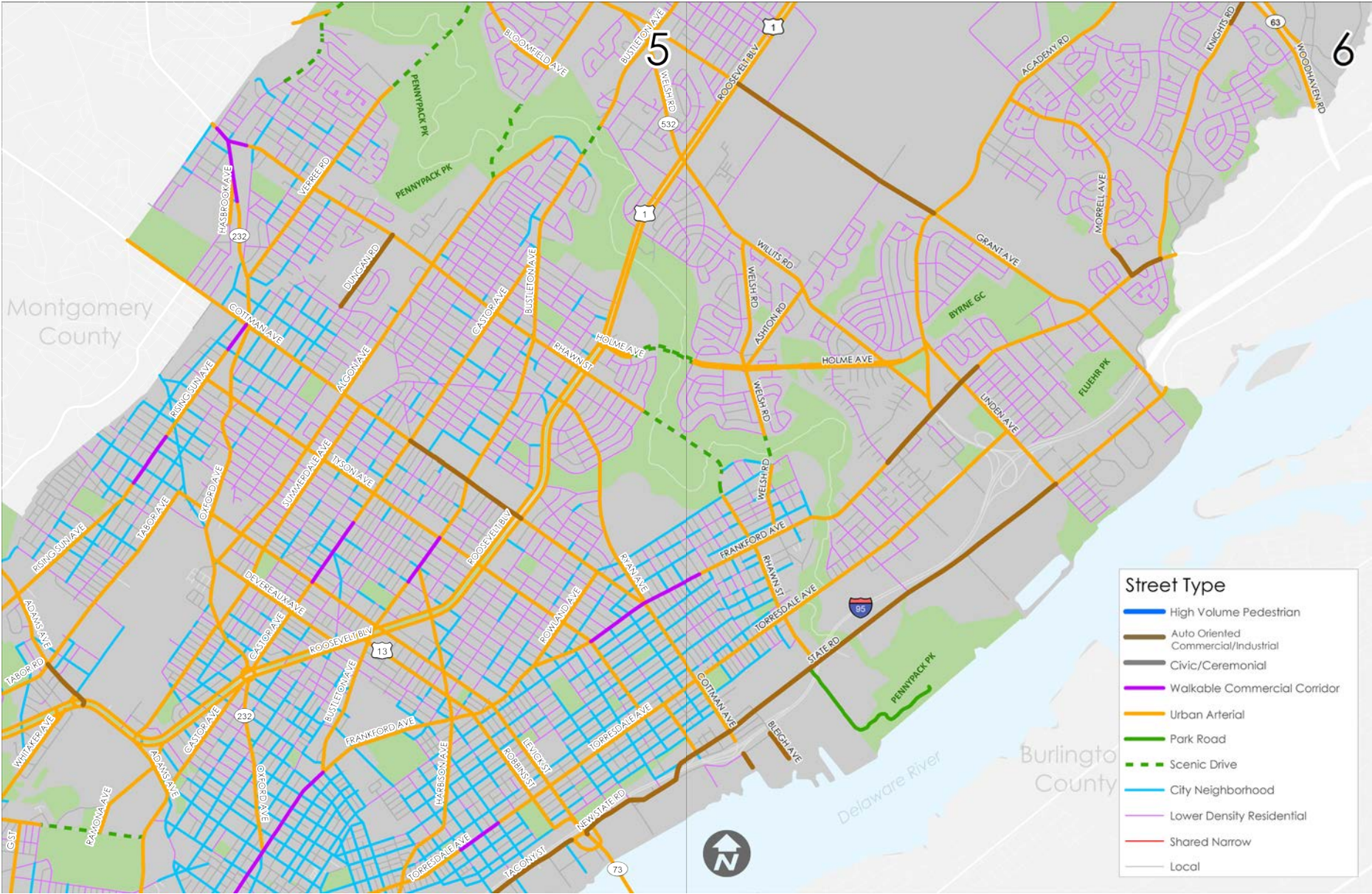
Maps 1 to 12 show the new street classification for all streets in the City. The following pages provide a summary for each street type, including:

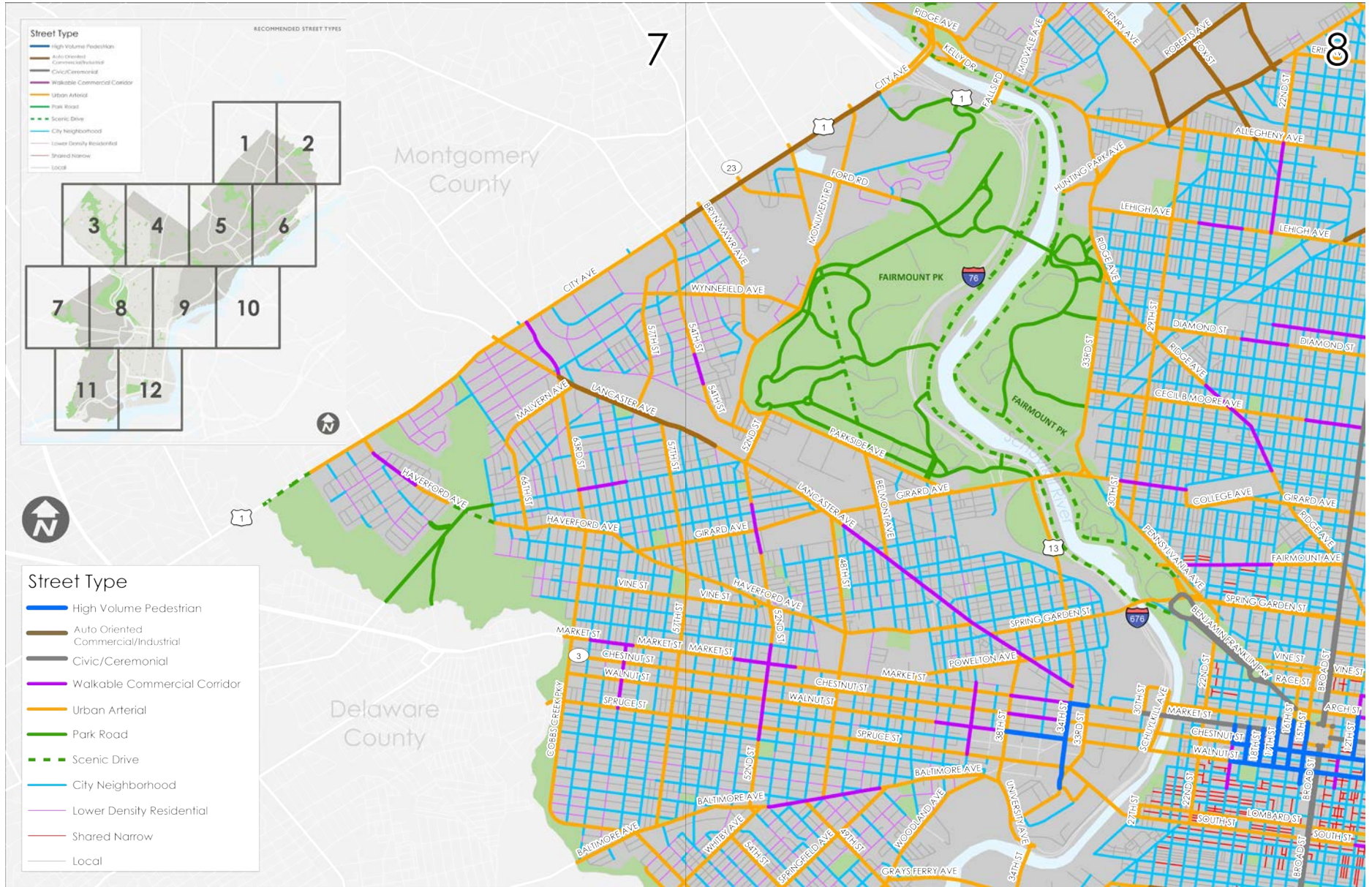
- A general description;
- Ranking of pedestrian and vehicle significance (high, medium, low);
- Functional classification (used to determine access and mobility standards);
- Typical land use and characteristics;
- General design considerations;
- Appropriate design treatments for each complete street "component" with links to more detailed design guidance (provided in Section 4); and
- Example photos and cross sections.

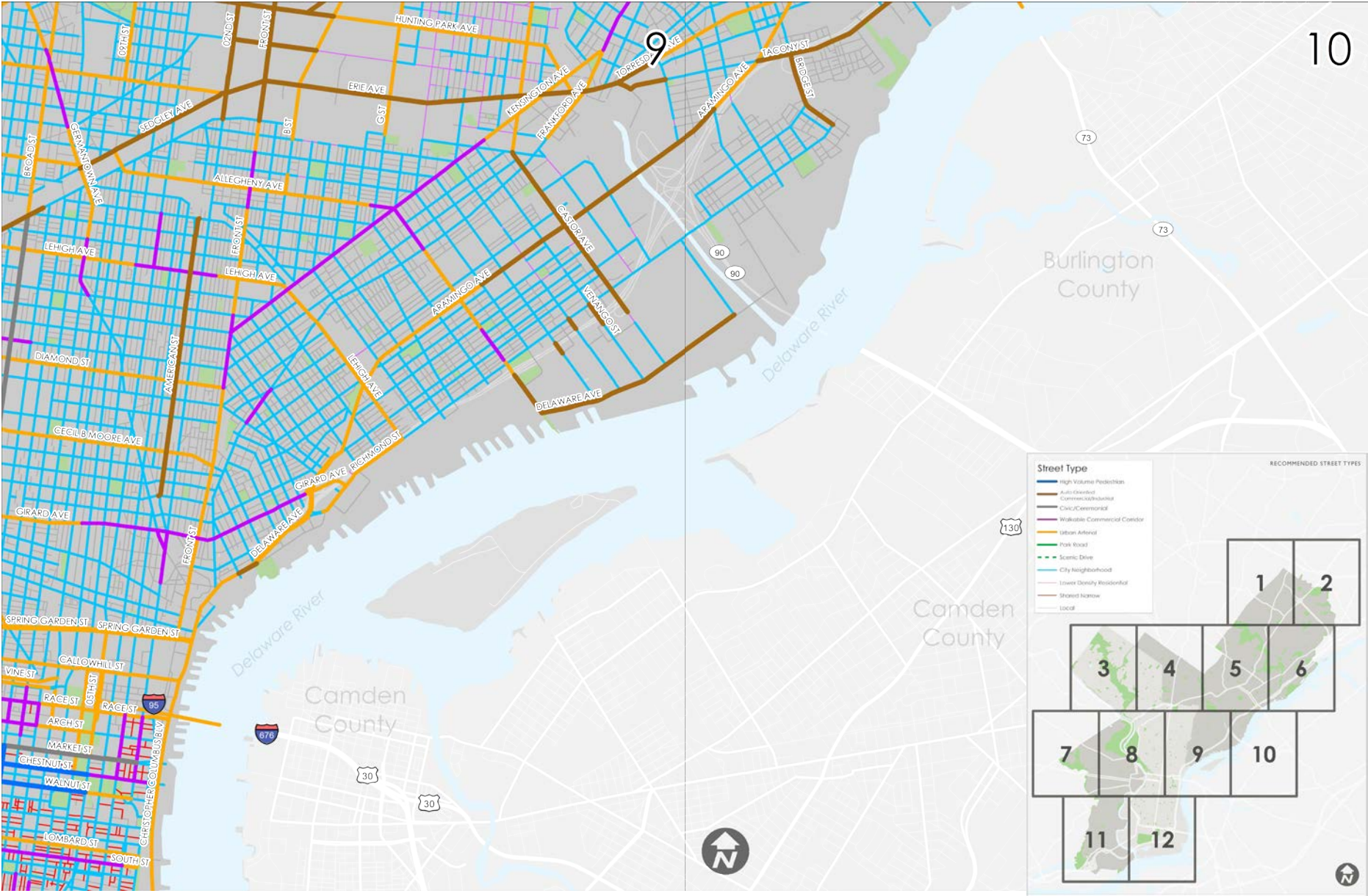


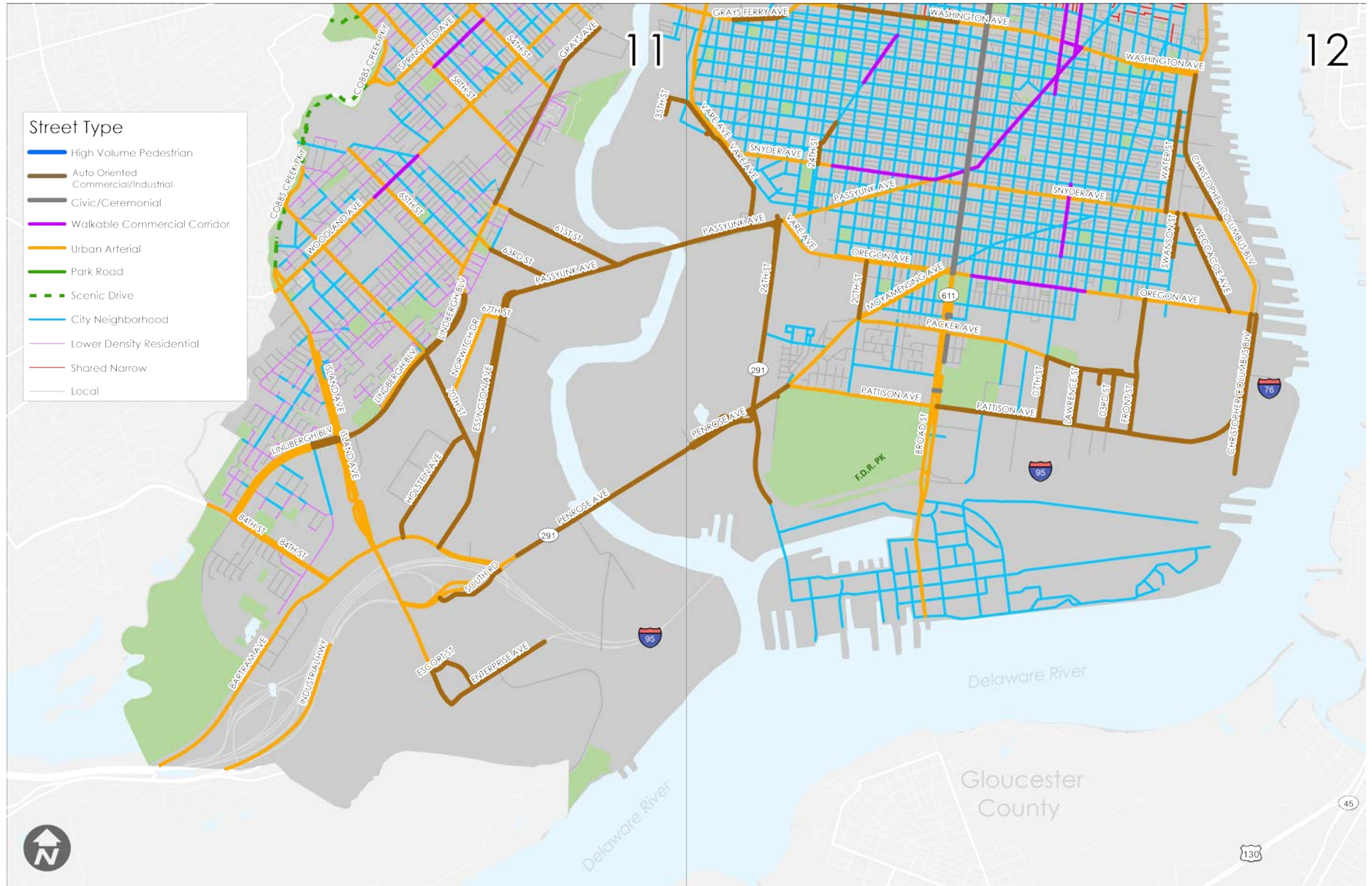












3.1 HIGH-VOLUME PEDESTRIAN

These streets are important pedestrian destinations and connections in high-density commercial, residential, and mixed use neighborhoods. High-Volume Pedestrian streets serve more than 1,200 pedestrians per hour during the midday. Many of these streets also provide important connections for vehicle traffic and serve high vehicle volumes. As a result, these streets must often be designed to prioritize pedestrian movement and accommodate high vehicle traffic volumes.

PEDESTRIAN SIGNIFICANCE

High

VEHICLE SIGNIFICANCE

High to Medium

FUNCTIONAL CLASSIFICATION

Major or Minor Arterial

TYPICAL LAND USE & CHARACTERISTICS:

- Commercial, mixed use, higher-density residential (R10+)

CONSIDERATIONS:

- Primarily located in Center City
- High levels of pedestrian activity. Focus on pedestrian environment and public realm.
- Buildings set at edge of street line and commercial uses create high potential for sidewalk encroachments.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 8' or half total sidewalk width (4.3.2)
- Curb ramps (4.3.3)

High Priority (include if width permits)

- 16' sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 4' furnishing zone (4.4.2)
- Lighting (4.4.4)

High Priority (include if width permits)

- Bicycle parking (4.4.3)
- Street trees (4.4.7)
- Trash bins, honor boxes, etc. (4.4.10)

Low Priority (consider if width permits)

- Benches & street furniture (4.4.5)
- Planters (4.4.8)
- Stormwater planters (4.4.9)

Appropriate in Limited Circumstances

- Sidewalk cafes (4.4.6)
- Newsstands (4.4.11)
- Vendors (4.4.12)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Conventional bike lane (4.5.1)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Buffered bike lane (4.5.3)
- Marked shared lane (4.5.9)

Appropriate in Limited Circumstances

- Cycle track (4.5.6)
- Bicycle friendly street (4.5.8)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- On-street parking (4.6.1)
- Transit stops & shelters (4.6.5)
- Loading zones (4.6.4)

Low Priority (consider if width permits)

- In-street bicycle parking (4.6.2)
Appropriate in Limited Circumstances
- Lay-by lanes (4.6.3)
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-11 lane width (4.7.1)
Low Priority (consider if width permits)
- Median (4.7.3)
Appropriate in Limited Circumstances
- Raised speed reducers (4.7.2)
- Bus lanes (4.7.5)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
Appropriate in Limited Circumstances
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: 17th at Sansom St

Below: 16th St at Market St



3.2 CIVIC/CEREMONIAL STREETS

This small group of streets includes some of the first mapped streets in the city (e.g., Broad Street, Market Street). These streets have great symbolic importance, house major ceremonial functions, and play a unique role in the life of the City (e.g., the Parkway). Sidewalks on Civic/Ceremonial streets operate as generous pedestrian promenades. As major arterials, these streets also have high vehicle significance.

PEDESTRIAN SIGNIFICANCE

High

VEHICLE SIGNIFICANCE

High

FUNCTIONAL CLASSIFICATION

Major Arterial

TYPICAL LAND USE & CHARACTERISTICS:

- High density, governmental, cultural, institutional, and retail.
- Some of the first mapped streets, grand buildings, parade route

CONSIDERATIONS:

- High levels of pedestrian activity. Focus on pedestrian environment and public realm.
- Use green infrastructure to improve pedestrian environment, calm traffic, and manage stormwater.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 10' or half total sidewalk width (4.3.2)
- Curb ramps (4.3.3)

High Priority (include if width permits)

- 20' sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 5' furnishing zone (4.4.2)
- Bicycle parking (4.4.3)
- Lighting (4.4.4)

High Priority (include if width permits)

- Benches & street furniture (4.4.5)
- Street trees (4.4.7)
- Trash bins, honor boxes, etc. (4.4.10)

Low Priority (consider if width permits)

- Sidewalk cafes (4.4.6)
- Planters (4.4.8)
- Stormwater planters (4.4.9)
- Newsstands (4.4.11)

Appropriate in Limited Circumstances

- Vendors (4.4.12)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Conventional bike lane (4.5.1)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Buffered bike lane (4.5.3)

Appropriate in Limited Circumstances

- Cycle track (4.5.6)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- On-street parking (4.6.1)
- Loading zones (4.6.4)
- Transit stops & shelters (4.6.5)

Appropriate in Limited Circumstances

- In-street bicycle parking (4.6.2)
- Lay-by lanes (4.6.3)
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-12 lane width (4.7.1)
Low Priority (consider if width permits)
- Median (4.7.3)
Appropriate in Limited Circumstances
- Bus lanes (4.7.5)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
Appropriate in Limited Circumstances
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Market St at 16th St

Below: Benjamin Franklin Parkway at 20th St



3.3 WALKABLE COMMERCIAL CORRIDOR

These streets are active commercial corridors with pedestrian-friendly physical development patterns (e.g., commercial sections of Germantown Ave. and Girard Ave.) On these streets, parking and access needs of local businesses often compete for limited right-of-way with pedestrian and bicycle facility needs. These streets have lower pedestrian volumes than High-Volume Pedestrian Streets, but are more pedestrian friendly than Auto-Oriented Commercial areas.

PEDESTRIAN SIGNIFICANCE

High

VEHICLE SIGNIFICANCE

High to Medium

FUNCTIONAL CLASSIFICATION

Major or Minor Arterial or Collector

TYPICAL LAND USE & CHARACTERISTICS:

- Retail, commercial mixed use, residential, some institutional.

CONSIDERATIONS:

- High levels of pedestrian activity. Focus on pedestrian environment and public realm.
- Buildings set at edge of street line and commercial uses create high potential for sidewalk encroachments.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 6' or half total sidewalk width (4.3.2)
- Curb ramps (4.3.3)

High Priority (include if width permits)

- 12' sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 4' furnishing zone (4.4.2)
- Lighting (4.4.4)

High Priority (include if width permits)

- Bicycle parking (4.4.3)
- Benches & street furniture (4.4.5)
- Street trees (4.4.7)
- Trash bins, honor boxes, etc. (4.4.10)

Low Priority (consider if width permits)

- Sidewalk cafes (4.4.6)
- Planters (4.4.8)
- Stormwater planters (4.4.9)
- Newsstands (4.4.11)

Appropriate in Limited Circumstances

- Architectural features (4.4.13)
- Vendors (4.4.12)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Conventional bike lane (4.5.1)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Buffered bike lane (4.5.3)
- Marked shared lane (4.5.9)

Appropriate in Limited Circumstances

- Bicycle friendly street (4.5.8)
- Cycle track (4.5.6)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- On-street parking (4.6.1)
- Transit stops & shelters (4.6.5)
- Loading zones (4.6.4)

Low Priority (consider if width permits)

- In-street bicycle parking (4.6.2)

Appropriate in Limited Circumstances

- Lay-by lanes (4.6.3)
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-11 lane width (4.7.1)
- Low Priority (consider if width permits)*
- Median (4.7.3)
- Appropriate in Limited Circumstances*
- Raised speed reducers (4.7.2)
- Chicanes (4.7.4)
- Bus lanes (4.7.5)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
- Appropriate in Limited Circumstances*
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Lancaster Ave at 36th St

Below: Girard Ave at Front St



3.4 URBAN ARTERIALS

Urban Arterials are major and minor arterials that carry high through traffic volumes. These streets usually have surface transit routes and must provide adequate pedestrian facilities to allow safe and comfortable access and waiting areas for transit users. Urban Arterials generally have more travel lanes and higher speeds, compared to City Neighborhood Streets. They may have commercial uses, but are not as pedestrian-friendly as Walkable Commercial Corridors.

PEDESTRIAN SIGNIFICANCE

Medium

VEHICLE SIGNIFICANCE

High to Medium

FUNCTIONAL CLASSIFICATION

Major or Minor Arterial

TYPICAL LAND USE & CHARACTERISTICS:

- Commercial, mixed use, higher-density residential (R10+).

CONSIDERATIONS:

- Use green infrastructure to improve pedestrian environment, calm traffic, and manage stormwater.
- Driveways may create frequent conflict points for pedestrians and bicyclists.
- Use signal timing, pedestrian refuges, crosswalks and other treatments to create safe and convenient crossings and routes between transit stops and surrounding destinations.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 6' or half total sidewalk width (4.3.2)
- Curb ramps (4.3.3)

High Priority (include if width permits)

- 12' sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 4' furnishing zone (4.4.2)
- Lighting (4.4.4)

High Priority (include if width permits)

- Bicycle parking (4.4.3)
- Street trees (4.4.7)

Low Priority (consider if width permits)

- Benches & street furniture (4.4.5)
- Stormwater planters (4.4.9)
- Trash bins, honor boxes, etc. (4.4.10)
- Newsstands (4.4.11)

Appropriate in Limited Circumstances

- Sidewalk cafes (4.4.6)
- Planters (4.4.8)
- Vendors (4.4.12)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Conventional bike lane (4.5.1)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Buffered bike lane (4.5.3)
- Cycle track (4.5.6)

Appropriate in Limited Circumstances

- Marked shared lane (4.5.9)
- Shared-Use Path (4.5.7)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- Transit stops & shelters (4.6.5)
Low Priority (consider if width permits)
- On-street parking (4.6.1)
- Loading zones (4.6.4)
Appropriate in Limited Circumstances
- In-street bicycle parking (4.6.2)
- Lay-by lanes (4.6.3)
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-11 lane width (4.7.1)
- Median (4.7.3)
Appropriate in Limited Circumstances
- Bus lanes (4.7.5)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
Low Priority (consider if width permits)
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Spring Garden St at Ridge Ave

Below: Le High Ave at American St



3.5 AUTO-ORIENTED COMMERCIAL / INDUSTRIAL

These streets are characterized by an auto-oriented development pattern with buildings set back significantly from the street, generally with parking lots in front of commercial uses. Auto-oriented streets generally do not provide a pedestrian-friendly environment and are not likely to attract high levels of pedestrian activity other than at transit stops and individual activity centers.

PEDESTRIAN SIGNIFICANCE

Low

VEHICLE SIGNIFICANCE

High

FUNCTIONAL CLASSIFICATION

Major or Minor Arterial or Collector,
others as selected

TYPICAL LAND USE & CHARACTERISTICS:

- Automobile services, drive-ins, “big box” retail and shopping centers, industrial.

CONSIDERATIONS:

- Use green infrastructure to improve pedestrian environment, calm traffic, and manage stormwater.
- Driveways may create frequent conflict points for pedestrians and bicyclists.
- Use signal timing, pedestrian refuges, crosswalks and other treatments to create safe and convenient crossings and routes to transit and activity centers.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 6' or half total sidewalk width (4.3.2)
- Curb ramps (4.3.3)
- *High Priority (include if width permits)*
- 12' sidewalk width (4.3.1)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 5' furnishing zone (4.4.2)
- Lighting (4.4.4)
- *High Priority (include if width permits)*
- Street trees (4.4.7)
- *Low Priority (consider if width permits)*
- Bicycle parking (4.4.3)
- Stormwater planters (4.4.9)
- Trash bins, honor boxes, etc. (4.4.10)
- *Appropriate in Limited Circumstances*
- Benches & street furniture (4.4.5)
- Sidewalk cafes (4.4.6)
- Planters (4.4.8)
- Vendors (4.4.12)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Buffered bike lane (4.5.3)
- Bike route signs (4.5.11)
- *Low Priority (consider if width permits)*
- Conventional bike lane (4.5.1)
- *Appropriate in Limited Circumstances*
- Cycle track (4.5.6)
- Shared-use path (4.5.7)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- Transit stops & shelters (4.6.5)
- *Low Priority (consider if width permits)*
- On-street parking (4.6.1)
- Loading zones (4.6.4)
- *Appropriate in Limited Circumstances*
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-12 lane width (4.7.1)
- Median (4.7.3)

Appropriate in Limited Circumstances

- Bus lanes (4.7.5)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Columbus Blvd at Snyder Ave



Below: American St and Le High Ave

3.6 PARK ROAD

Park roads provide transportation routes for vehicles and pedestrians within local parks. These streets typically have lower speed limits compared to Scenic Drives. These streets may include shared-use side paths for pedestrians and bicyclists and/or sidewalks and bike lanes or shared roadway facilities.

PEDESTRIAN SIGNIFICANCE

High to Medium

VEHICLE SIGNIFICANCE

Medium

FUNCTIONAL CLASSIFICATION

Minor Arterial, Collector or Local

TYPICAL LAND USE & CHARACTERISTICS:

- Parks

CONSIDERATIONS:

- Use green infrastructure to improve pedestrian environment, calm traffic, and manage stormwater.
- Sidewalk and/or sidepath width should be based on expected use.
- High use areas and/or streets serving recreational and transportation users may use both on and off-street bicycle facilities.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 8' if side path or 5' if sidewalk (4.3.2)
- Curb ramps (4.3.3)
- No minimum total sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 3' clear right-of-way on opposite side of path from road (4.4.1)
- Min. 5' furnishing zone (4.4.2)

High Priority (include if width permits)

- Bicycle parking (4.4.3)
- Street trees (4.4.7)

Low Priority (consider if width permits)

- Lighting (4.4.4)
- Benches & street furniture (4.4.5)
- Stormwater planters (4.4.9)
- Trash bins, honor boxes, etc. (4.4.10)

Appropriate in Limited Circumstances

- Sidewalk cafes (4.4.6)
- Vendors (4.4.12)
- Planters (4.4.8)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Conventional bike lane (4.5.1)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Buffered bike lane (4.5.3)
- Shared-use path (4.5.7)

Appropriate in Limited Circumstances

- Bicycle friendly street (4.5.8)
- Cycle track (4.5.6)
- Marked shared lane (4.5.9)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- Transit stops & shelters (4.6.5)
- Low Priority (consider if width permits)*

- On-street parking (4.6.1)
 - Loading zones (4.6.4)
- Appropriate in Limited Circumstances*
- Lay-by lanes (4.6.3)
 - Alternative uses of parking lane (4.6.6)



4.7 VEHICLE / CARTWAY COMPONENT

High Priority (include if width permits)

- 10-11 lane width (4.7.1)
- Low Priority (consider if width permits)*

- Raised speed reducers (4.7.2)
 - Median (4.7.3)
- Appropriate in Limited Circumstances*
- Chicanes (4.7.4)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
- Low Priority (consider if width permits)*
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Reservoir Dr at Diamond St

Below: Landsdowne Ave at 75th



3.7 SCENIC DRIVE

Scenic Drives are major or minor arterials that provide a scenic view along parks or waterways. These streets typically have higher speeds than Park Roads and local streets. Scenic Drives often accommodate pedestrian travel via Shared-use paths. Shared-use paths and/or bike lanes or shared roadway facilities may be used to accommodate bicyclists.

PEDESTRIAN SIGNIFICANCE

High to Medium

VEHICLE SIGNIFICANCE

High to Medium

FUNCTIONAL CLASSIFICATION

Major Arterial, some Minor Arterials

TYPICAL LAND USE & CHARACTERISTICS:

- Parks or waterways, may include low density residential with heavy tree canopy.

CONSIDERATIONS:

- Use green infrastructure to improve pedestrian environment, calm traffic, and manage stormwater.
- Sidewalk and/or sidepath width should be based on expected use.
- High use areas and/or streets serving recreational and transportation users may use both on and off-street bicycle facilities.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 6' if walkway is separate from bike-way (4.3.2)
- Curb ramps (4.3.3)
- No minimum total sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 3' clear right-of-way on opposite side of path from road (4.4.1)
- Min. 3' furnishing zone (4.4.2)
- Lighting (4.4.4)

High Priority (include if width permits)

- Bicycle parking (4.4.3)
- Street trees (4.4.7)

Low Priority (consider if width permits)

- Benches & street furniture (4.4.5)
- Trash bins, honor boxes, etc. (4.4.10)
- Stormwater planters (4.4.9)

Appropriate in Limited Circumstances

- Planters (4.4.8)
- Sidewalk cafes (4.4.6)
- Vendors (4.4.12)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Conventional bike lane (4.5.1)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Buffered bike lane (4.5.3)
- Shared-use path (4.5.7)

Appropriate in Limited Circumstances

- Cycle track (4.5.6)
- Marked shared lane (4.5.9)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

Low Priority (include if width permits)

- Transit stops & shelters (4.6.5)

Appropriate in Limited Circumstances

- On-street parking (4.6.1)
- In-street bicycle parking (4.6.2)
- Loading zones (4.6.4)
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-12 lane width (4.7.1)

Low Priority (consider if width permits)

- Median (4.7.3)

Appropriate in Limited Circumstances

- Chicanes (4.7.4)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
Appropriate in Limited Circumstances
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Kelly Dr at Waterworks Dr

Below: Lincoln Dr at Henry Ave



3.8

CITY NEIGHBORHOOD STREET

City Neighborhood Streets include the majority of the grid streets in older sections of Philadelphia. These streets serve an equally important role for local vehicle and pedestrian traffic. The fronts of buildings on these streets typically meet the street line (edge of sidewalk), unlike Lower Density Residential Streets where dwellings are set back from the sidewalk.

PEDESTRIAN SIGNIFICANCE

Medium

VEHICLE SIGNIFICANCE

Medium

FUNCTIONAL CLASSIFICATION

Minor Arterial or Collector

TYPICAL LAND USE & CHARACTERISTICS:

- Commercial, mixed use, higher density residential (R10+).

CONSIDERATIONS:

- Use green infrastructure to improve pedestrian environment and manage stormwater.
- Buildings set at edge of street line create high potential for sidewalk encroachments.
- Appropriateness of bike lanes or marked shared lanes should be evaluated based on expected use, vehicle speeds and volumes.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 6' or half total sidewalk width (4.3.2)
- Curb ramps (4.3.3)

High Priority (include if width permits)

- 12' sidewalk width (4.3.1)

Appropriate in Limited Circumstances

- Shared/Pedestrian Priority Street (4.3.4)
- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Min. 4' furnishing zone (4.4.2)
- Lighting (4.4.4)

High Priority (include if width permits)

- Street trees (4.4.7)

Low Priority (consider if width permits)

- Bicycle parking (4.4.3)
- Stormwater planters (4.4.9)

Appropriate in Limited Circumstances

- Benches & street furniture (4.4.5)
- Sidewalk cafes (4.4.6)
- Planters (4.4.8)
- Trash bins, honor boxes, etc. (4.4.10)
- Newsstands (4.4.11)
- Vendors (4.4.12)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Bicycle friendly street (4.5.8)
- Bike route signs (4.5.11)

Low Priority (consider if width permits)

- Conventional bike lane (4.5.1)
- Marked shared lane (4.5.9)

Appropriate in Limited Circumstances

- Buffered bike lane (4.5.3)
- Green colored pavement (4.5.10)



4.6 CURBSIDE MANAGEMENT COMPONENT

High Priority (include if width permits)

- On-street parking (4.6.1)
- Transit stops & shelters (4.6.5)
- Loading zones (4.6.4)

Appropriate in Limited Circumstances

- In-street bicycle parking (4.6.2)
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 10-11 lane width (4.7.1)

Appropriate in Limited Circumstances

- Raised speed reducers (4.7.2)
- Median (4.7.3)
- Chicanes (4.7.4)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
- Low Priority (consider if width permits)*
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Pine St at 18th St

Below: 12th St at Clay St



3.9 LOW-DENSITY RESIDENTIAL

Lower Density Residential Streets include most residential streets outside Center City, North, South Philadelphia, and West Philadelphia. These streets were generally constructed more recently than City Neighborhood Streets and are characterized by dwellings that are set back from the sidewalk. These streets serve local vehicle, pedestrian, and bicycle traffic.

PEDESTRIAN SIGNIFICANCE

Medium

VEHICLE SIGNIFICANCE

Low

FUNCTIONAL CLASSIFICATION

Collector or Local

TYPICAL LAND USE & CHARACTERISTICS:

- Residential, some retail, recreational, or institutional.

CONSIDERATIONS:

- Furnishing zone should be permeable. Use green infrastructure to improve pedestrian environment and manage stormwater.
- Driveways may create frequent conflict points for pedestrians and bicyclists.
- Appropriateness of bike lanes or marked shared lanes should be evaluated based on expected use, vehicle speeds and volumes.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 5' (4.3.2)
- Curb ramps (4.3.3)
High Priority (include if width permits)
- 10' sidewalk width for new development (4.3.1)
Appropriate in Limited Circumstances
- Shared/Pedestrian Priority Street (4.3.4)
- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- Building setback is building zone (4.4.1)
- Min. 3.5' furnishing zone for new development, should be permeable (4.4.2)
- Lighting (4.4.4)
High Priority (include if width permits)
- Street trees (4.4.7)
Low Priority (consider if width permits)
- Stormwater planters (4.4.9)
Appropriate in Limited Circumstances
- Bicycle parking (4.4.3)
- Benches & street furniture (4.4.5)
- Sidewalk cafes (4.4.6)
- Planters (4.4.8)
- Trash bins, honor boxes, etc. (4.4.10)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Bicycle friendly street (4.5.8)
Low Priority (consider if width permits)
- Bike route signs (4.5.11)
Appropriate in Limited Circumstances
- Conventional bike lane (4.5.1)
- Marked shared lane (4.5.9)



4.6 CURBSIDE MANAGEMENT COMPONENT

Low Priority (consider if width permits)

- On-street parking (4.6.1)
- Loading zones (4.6.4)
- Transit stops & shelters (4.6.5)
Appropriate in Limited Circumstances
- Alternative uses of parking lane (4.6.6)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 9-11 lane width (4.7.1)
- *Appropriate in Limited Circumstances*
- Raised speed reducers (4.7.2)
- Median (4.7.3)
- Chicanes (4.7.4)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
- *Low Priority (consider if width permits)*
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Chester Ave at 46th St

Below: Drexel Rd at 64th St



3.10 SHARED NARROW

These streets are very narrow local streets, primarily located in older areas of the City. Sidewalks also tend to be narrow on these streets, but pedestrians and bicyclists can generally walk and ride comfortably in the street similar to pedestrian priority streets. On-street parking is precluded on streets with cartways of 13' or less.

PEDESTRIAN SIGNIFICANCE

Medium

VEHICLE SIGNIFICANCE

Low

FUNCTIONAL CLASSIFICATION

Local, ADT less than 500,
Right-of-Way less than 30'

TYPICAL LAND USE & CHARACTERISTICS:

- Mostly residential.

CONSIDERATIONS:

- Building steps and stoops may create frequent obstructions that make it difficult to maintain minimum sidewalk clear widths.
- Pedestrians and vehicles may share the roadway on most shared narrow streets.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- No minimum sidewalk width (4.3.1)
- Min. clear width 5' (4.3.2)
- Curb ramps (4.3.3)
High Priority (include if width permits)
- Shared/Pedestrian Priority Street (4.3.4)
Appropriate in Limited Circumstances
- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- No building zone obstructions beyond line of steps or stoops (4.4.1)
High Priority (include if width permits)
- Street trees (4.4.7)
Low Priority (consider if width permits)
- Lighting (4.4.4)
- Stormwater planters (4.4.9)
Appropriate in Limited Circumstances
- Planters (4.4.8)
- Architectural features (4.4.13)



4.5 BICYCLE COMPONENT

Low Priority (consider if width permits)

- Bicycle friendly street (4.5.8)
Appropriate in Limited Circumstances
- Bike route signs (4.5.11)



4.6 CURBSIDE MANAGEMENT COMPONENT

No Curbside Management treatments are recommended on shared narrow streets



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 9-11 lane width (4.7.1)



4.8 URBAN DESIGN COMPONENT

Required

- - Stormwater management (4.8.4)
Appropriate in Limited Circumstances
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



Above: Perot St at 25th St

Below: Manning St at 17th St



3.11 LOCAL

Local streets are streets in residential or non-residential neighborhoods that are smaller than City Neighborhood Streets and Low Density Residential Streets. This classification includes service streets and minor residential streets. Parking is provided on at least one side of the street and sidewalks are usually present.

PEDESTRIAN SIGNIFICANCE

Low

VEHICLE SIGNIFICANCE

Low

FUNCTIONAL CLASSIFICATION

Local

TYPICAL LAND USE & CHARACTERISTICS:

- Residential, some retail, recreational, or institutional.

CONSIDERATIONS:

- Use green infrastructure to improve pedestrian environment and manage stormwater.
- Driveways may create frequent conflict points for pedestrians and bicyclists.
- Appropriateness of bike lanes or marked shared lanes should be evaluated based on expected use, vehicle speeds and volumes.

DESIGN TREATMENTS:



4.3 PEDESTRIAN COMPONENT

Required

- Min. clear width 5' (4.3.2)
- Curb ramps (4.3.3)
- High Priority (include if width permits)*
- 10' sidewalk width for new development (4.3.1)
- Appropriate in Limited Circumstances*
- Shared/Pedestrian Priority Street (4.3.4)
- Festival (curbless) street (4.3.5)



4.4 BUILDING & FURNISHING COMPONENT

Required

- No building zone obstructions beyond line of steps or stoops (4.4.1)
- Min. 3.5' furnishing zone for new residential development (4.4.2)
- Lighting (4.4.4)
- High Priority (include if width permits)*
- Street trees (4.4.7)
- Low Priority (consider if width permits)*
- Stormwater planters (4.4.9)
- Appropriate in Limited Circumstances*
- Bicycle parking (4.4.3)
- Benches & street furniture (4.4.5)
- Sidewalk cafes (4.4.6)
- Vendors (4.4.12)

- Planters (4.4.8)
- Trash bins, honor boxes, etc. (4.4.10)



4.5 BICYCLE COMPONENT

High Priority (include if width permits)

- Bicycle friendly street (4.5.8)
- Appropriate in Limited Circumstances*
- Conventional bike lane (4.5.1)
- Marked shared lane (4.5.9)
- Bike route signs (4.5.11)



4.6 CURBSIDE MANAGEMENT COMPONENT

Low Priority (consider if width permits)

- On-street parking (4.6.1)
- Loading zones (4.6.4)
- Appropriate in Limited Circumstances*
- Alternative uses of parking lane (4.6.6)
- Transit stops & shelters (4.6.5)



4.7 VEHICLE/CARTWAY COMPONENT

High Priority (include if width permits)

- 9-11 lane width (4.7.1)
Appropriate in Limited Circumstances
- Raised speed reducers (4.7.2)
- Chicanes (4.7.4)



4.8 URBAN DESIGN COMPONENT

Required

- Stormwater management (4.8.4)
Low Priority (consider if width permits)
- Driveways (4.8.1)



4.9 INTERSECTIONS & CROSSINGS

See Intersection Design Treatment Matrix (Table 2) and Intersection Design Treatment Guidelines (Section 4.9)



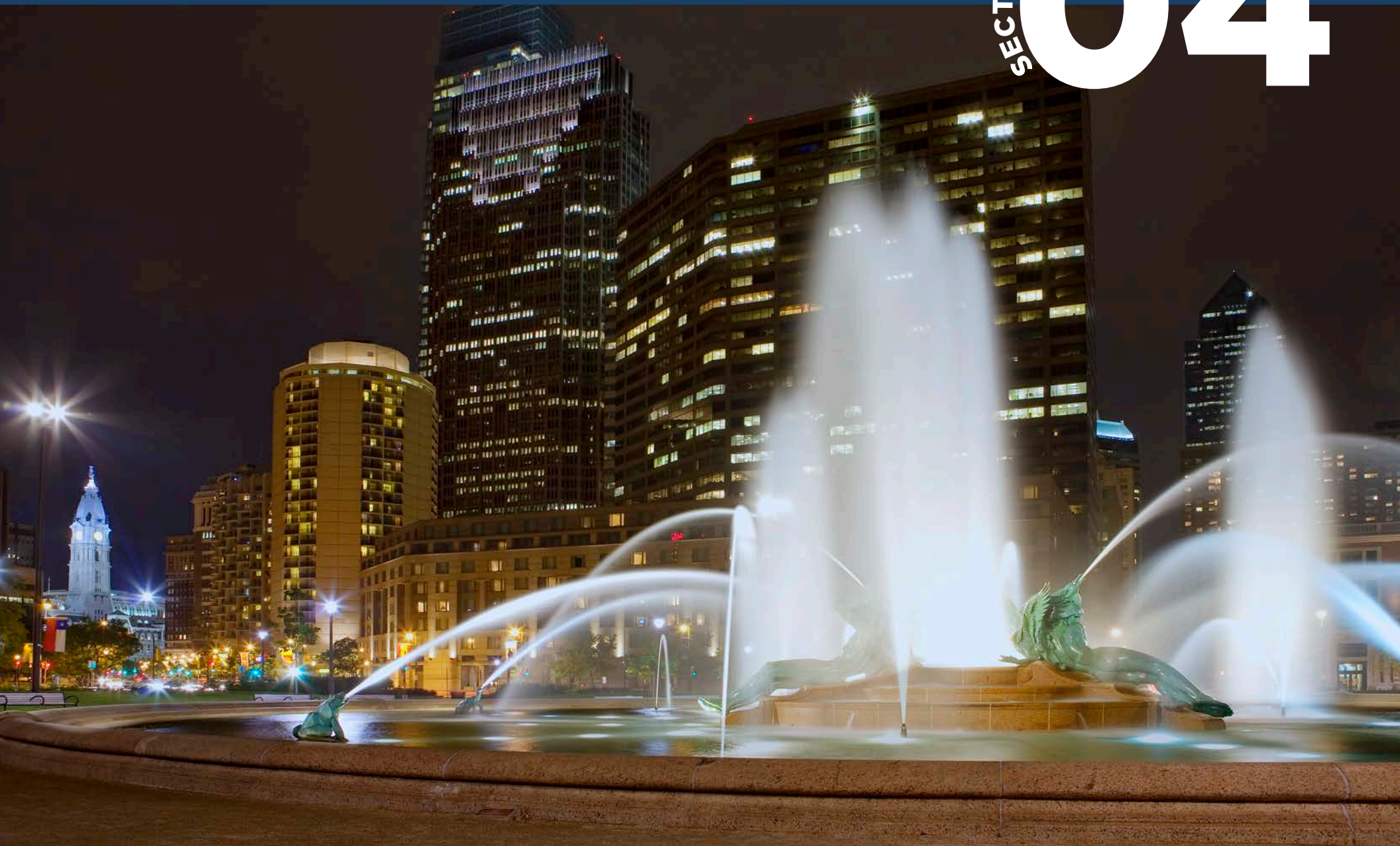
Above: Chancellor St at 17th St

Below: Mt Vernon St at Lower St



COMPLETE STREETS COMPONENTS AND DESIGN TREATMENTS

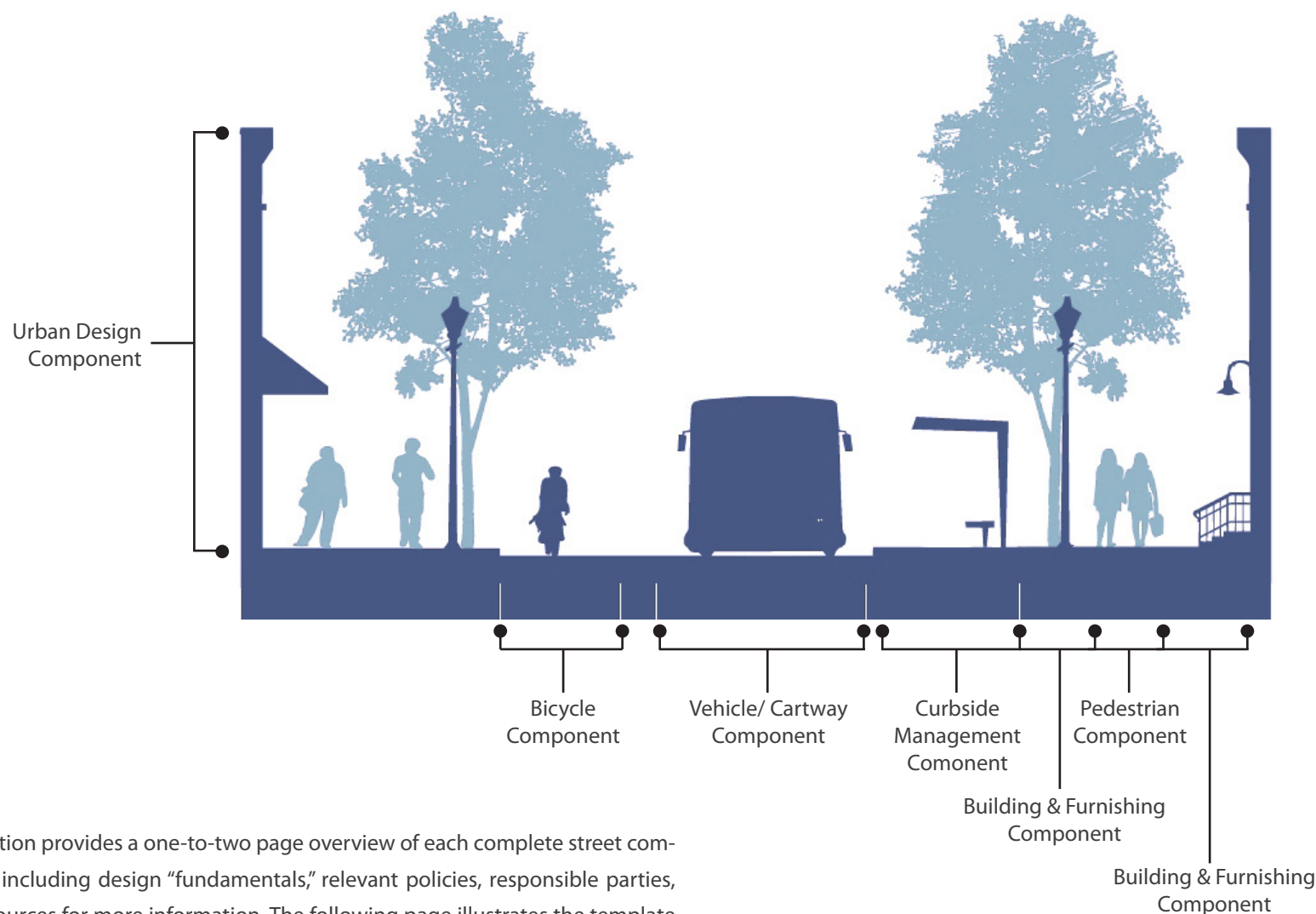
SECTION 04



4.1 OVERVIEW OF COMPLETE STREETS COMPONENTS

As discussed in Section 1.3.1, the *Philadelphia Complete Streets Design Handbook* identifies seven conceptual complete street “components” that make up the public right-of-way: Pedestrian (section 4.3), Building & Furnishing (section 4.4), Bicycle (section 4.5), Curbside Management (section 4.6), Vehicle/Cartway (section 4.7), Urban Design (section 4.8), and Intersections & Crossings (section 4.9).

The figure below illustrates the approximate locations within the right-of-way that are addressed by each of these components. Throughout the Handbook, these components are used to ease identification of design treatments that are appropriate for different types of projects and different street types.



This section provides a one-to-two page overview of each complete street component including design “fundamentals,” relevant policies, responsible parties, and resources for more information. The following page illustrates the template for each component overview .

Component Icon	EXAMPLE COMPONENT OVERVIEW Description of component, including which portions of the public right-of-way it addresses and its relationship to other components.	Graphic illustrating location of component in typical street cross section.
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Photo Caption

FUNDAMENTALS:

- Complete street design basics.

POLICY:

- Summary of relevant existing federal, state, and local policies.

ROLES & RESPONSIBILITIES:

- Summary of parties responsible for permitting, construction, operation, and maintenance.

CONTACTS:

- Who to contact in the City of Philadelphia for more information.



Photo Caption

OTHER RESOURCES:

- Plans, guidebooks, websites, and other resources for more information.

4.2 OVERVIEW OF DESIGN TREATMENTS

All street design should include a consistent set of design treatments that are easily understandable to motorists, bicyclists, and pedestrians. These treatments should be carefully selected to accommodate all roadway users, encourage predictable and desirable travel behavior, and account for the different uses and contexts of various street types throughout the City. Good complete street design should also provide for and balance the multiple functions of streets as spaces for travel, social/cultural events, commerce, and stormwater management. Wherever possible, the City should coordinate street improvement projects so that related improvements can be made simultaneously. This approach helps to increase efficiency of street project implementation, decrease construction costs and construction interruptions, and helps ensure that improvements create a more cohesive street design. However, standalone projects should also be pursued whenever opportunities arise to make quick, cost effective improvements.

The following section provides specific design guidance for individual complete street design treatments that are appropriate on various street types throughout the City. The Design Treatment Suitability Matrix (Section 1.1.2) of the Handbook provides a summary of each design treatment, and whether it is required, high priority, low priority, appropriate in limited circumstances, or not recommended on each street type presented in Section 3.

Each design treatment discussed in this chapter is grouped based on the complete street component it is most closely related to (e.g., where it is typically located in the public right-of-way). For example, bike lanes are discussed as “Bicycle” component design treatments; bike boxes and signals as “Intersection & Crossing” design treatments, bike parking as a “Building & Furnishing” design treatment, and in-street bike parking as a “Curbside Management” design treatment. Each design treatment is also given a treatment number (4.X.X) that is used as a cross reference throughout this document.

For each design treatment, a one-to-two page summary is provided.

The following page illustrates the template for each design treatment description.

The design guidance provided throughout this Handbook is intended to be consistent with relevant local and national standards and laws (e.g., Philadelphia Code, MUTCD, ADA) and provides specific references to these documents wherever possible. The Handbook does not provide guidance on specific construction materials (e.g., granite vs. concrete curbs), but references relevant Philadelphia requirements where available.

Curb extensions, pedestrian refuges, and other treatments may be addressed in multiple components since they serve pedestrian, stormwater management, crossing, and other functions in complete streets.



Component
Icon

TREATMENT ID#

EXAMPLE DESIGN TREATMENT DESCRIPTION

Design treatment overview
and description.



Photo Caption



Photo Caption

APPLICATION:

- Street types on which design treatment is appropriate.
-
-
-

CONSIDERATIONS:

- Context specific factors to consider when evaluating the advantages, disadvantages, and appropriateness of design treatments at a specific site.
-
-
-

DESIGN:

- Design details, including City Code requirements, design standards, and national best practices etc.
-
-
-

ROLES & RESPONSIBILITIES:

- Summary of parties responsible for permitting, construction, operation, and maintenance.
- General level of maintenance required.
-
-
-

GREEN STREET OPPORTUNITIES:

- Green infrastructure (stormwater management) features that can be incorporated into design.
-
-
-

OTHER RESOURCES:

- Plans, guidebooks, websites, and other resources for more information.
-
-

EXAMPLES:

- Locations within Philadelphia where design treatment has been used.
-

RESOURCES:

- Plans, guidebooks, websites, and other resources for more information.
-

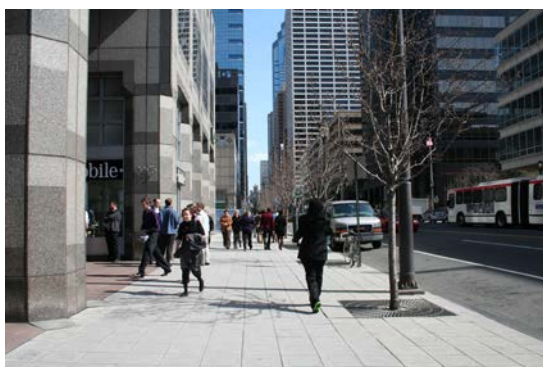


4.3 PEDESTRIAN COMPONENT

The Pedestrian Component addresses the clear area located between the curb and the adjacent building frontage where pedestrians travel, also known as the “clear zone” or “walking zone.” Related items: Street furniture, trees, planters, architectural features, and sidewalk cafes (4.4 Building & Furnishing Component), pedestrian crossings (4.9 Intersection Component), lay-by lanes (4.6 Curbside Management Component), driveways and urban design (4.8 Urban Design Component).



Sidewalk space is typically divided into Building, Walking, and Furnishing zones. The Pedestrian Element primarily addresses the Walking Zone (4.3.2).



Areas with high pedestrian traffic and significance require special design consideration.

FUNDAMENTALS:

- Provide sidewalks that are designed and maintained to create an attractive pedestrian environment and provide safe access for all citizens.
- Use pedestrian volumes and the significance of a street within the pedestrian network as defined by the Street Typology (Section 3) to inform design decisions.
- Minimize vehicle intrusions into the pedestrian zone via driveways (4.8.1) and lay-by lanes (4.6.3).
- Provide direct pedestrian routes between destinations and frequent crossing opportunities (recommended every 300-500') wherever possible.

POLICY:

- The *Philadelphia Pedestrian & Bicycle Plan* identifies minimum or recommended sidewalk (4.3.1) and walking zone (4.3.2) widths for the 11 street types described in Section 3.
- Streets Department and Section 11-505 of the Philadelphia Code determine design specifications for all sidewalks, curbs, and driveways across sidewalks.
- The current *Federal Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way* provides standards for the design, construction, and alteration of pedestrian facilities to ensure accessibility for individuals with disabilities.

ROLES & RESPONSIBILITIES:

- Property owners are responsible for the maintenance and repair of sidewalks and curbs that abut their property.
- Streets Department may grade, pave, or repair sidewalks and set curbs on any public street in the City, but may only assess abutting property owners 30% of the cost of the work.
- City Planning Commission develops the pedestrian plan and integrates pedestrian facilities with development proposals and neighborhood and district plans.
- Sidewalks are generally improved through targeted streetscape projects. There is currently no dedicated capital funding for sidewalk repair (except in Department of Parks and Recreation).

CONTACTS:

- Mayor's Office of Transportation and Utilities Bicycle and Pedestrian Coordinator, (215) 686-9003 www.phila.gov/streets/Bike_Network.html
- City Planning Commission Pedestrian and Bicycle Plan Project Manager, (215) 683-4643, www.philaplanning.org

OTHER RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan: www.philaplanning.org
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- Public Right of Way Access Guidelines <http://www.access-board.gov/provac/>
- MUTCD www.mutcd.fhwa.dot.gov

SIDEWALK ZONES

Sidewalks should provide an active and accommodating public realm that creates a pleasant pedestrian environment and serves multiple public functions, including: space for walking, landscaping and green infrastructure, lighting (4.4.4), seating (4.4.5) and other amenities, as well as commercial activities. To balance desire for amenities in the public realm with the need to maintain a safe and comfortable travelway for pedestrians, the sidewalk must be organized. This organization can be viewed as a series of sidewalk zones from the property line to the curb:

- **Building Zone (4.4.1)** – the transition area between the property line and sidewalk where awnings, stairs, storefront displays, and other building elements intrude into the sidewalk.
- **Walking Zone (4.3.2)** – the clear portion of the sidewalk on which pedestrians travel.
- **Furnishing Zone (4.4.2)** – the portion of the sidewalk used for street furniture, trees and landscaping, transit stops, lights, fire hydrants, and other furnishings.

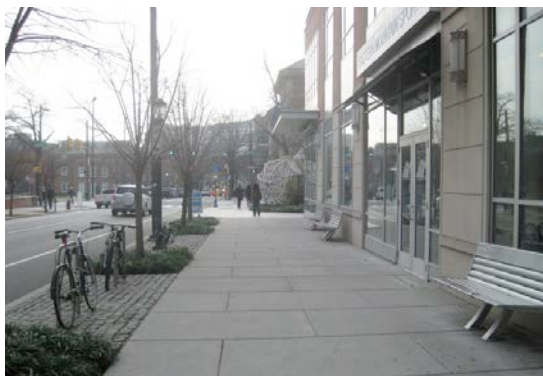
In this Handbook, these zones correspond to two complete streets components: the Building & Furnishing Component (4.4) and the Pedestrian Component (4.3). The table below shows the minimum sidewalk zone widths for each street type described in Section 3.



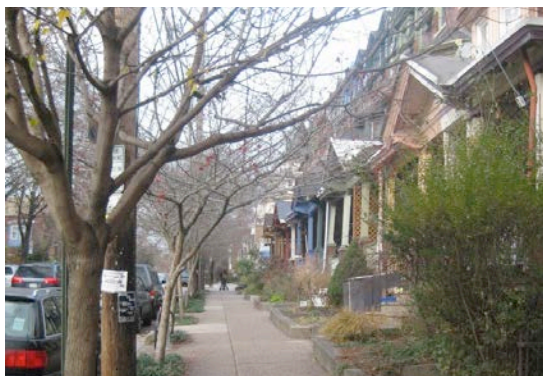
Street Type	Total Sidewalk Width (4.3.1)	Furnishing Zone (4.4.2)	Walking Zone (4.3.2)	Building Zone (4.4.1)
3.1 High-Volume Pedestrian	≥16'	≥4'	≥8'	No min.
3.2 Civic/ Ceremonial Street	≥20'	≥5'	≥10'	No min.
3.3 Walkable Commercial Corridor	≥12'	≥4'	≥6'	No min.
3.4 Urban Arterial	≥12'	≥4'	≥6'	No min.
3.5 Auto-Oriented Commercial/ Industrial	≥12'	≥5'	≥6'	No min.
3.6 Park Road	≥8'	≥3'	≥5'	≥3'
3.7 Scenic Drive	≥9'	≥3'	≥6'	≥3'
3.8 City Neighborhood	≥12'	≥4'	≥6'	No min.
3.9 Low-Density Residential	≥10'	≥3.5'	≥5'	Building setback
3.10 Shared Narrow	-	No min.	≥5'	No min.
3.11 Local	≥10'	≥3.5'	≥5'	No min.

**TREATMENT 4.3.1****SIDEWALK WIDTH**

Total sidewalk width refers to the distance between the building line and curb. This area includes the Building Zone (4.4.1), Walking Zone (4.3.2), and Furnishing Zone (4.4.2). Narrow sidewalks can make it difficult, uncomfortable, and unsafe for pedestrians to travel on a street. Wider sidewalks provide enough space for pedestrians to walk and for landscaping and amenities that contribute to an inviting streetscape and pedestrian environment.



Minimum sidewalk width is 12' on most street types, including Walkable Commercial Corridors.



On Local Streets, minimum total sidewalk width is 10'.

APPLICATION:

- Recommended or minimum total sidewalk widths for most street types are established in the *Philadelphia Pedestrian and Bicycle Plan* (see Table 1).

CONSIDERATIONS:

- Wider sidewalks should be prioritized in areas with:
 - High pedestrian volume or significance;
 - Street furnishings (4.4.5) and/or landscaping;
 - Transit stops (4.6.5);
 - Street-level commercial activity such as storefronts, vendors (4.4.12), or sidewalk cafes (4.4.6);
 - Civic or ceremonial functions;
 - Tall buildings that create shadow and require greater separation; and
 - High traffic volumes and/or speeds.
- “Ribbon sidewalks” that are separated from the roadway by a continuous unpaved planted strip are appropriate in residentially zoned areas. Full sidewalks should be used elsewhere.

DESIGN:

- Sidewalks should almost always be provided on both sides of the roadway.
- Sidewalks must conform to ADA requirements for minimum clear path (4.3.2) and provide spaces where wheelchair users can pass one another or turn around.
- Maximum sidewalk cross slope of 2.0% for a width of at least 5'.

GREEN STREET OPPORTUNITIES:

- Sidewalks should include planted areas and stormwater management features (4.8.4) wherever possible.
- Consider using permeable pavements.

ROLES & RESPONSIBILITIES:

- Property owners are responsible for the maintenance and repair of sidewalks and curbs that abut their property.
- Streets Department may grade, pave, or repair sidewalks and set curbs on any public street in the City, but may only assess abutting property owners 30% of the cost of the work.
- Sidewalks are generally improved through targeted streetscape projects. There is currently no dedicated capital funding for sidewalk repair (except in Dept. of Parks and Recreation).

EXAMPLES:

- Wide sidewalks on West Market St.
- Arch St at Convention Center

RESOURCES:

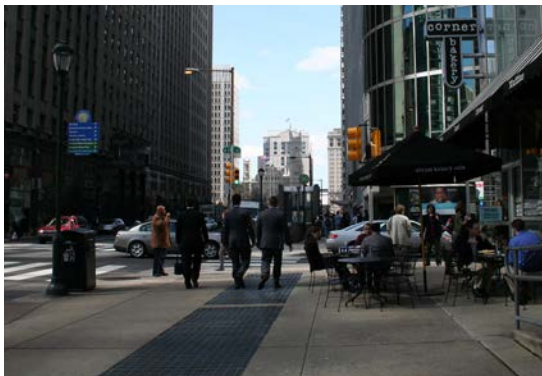
- Philadelphia Pedestrian & Bicycle Plan www.philaplanning.org
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- Public Right of Way Access Guidelines <http://www.access-board.gov/prowac/>

**TREATMENT 4.3.2****WALKING ZONE WIDTH**

Walking zone or “clear” width refers to the clear portion of the sidewalk where pedestrians can walk unobstructed. The standard walking zone width depends on the number of pedestrians using or expected to use a particular sidewalk. All sidewalks should provide at least 5’ of clear space to allow wheelchair passage.



Two people walking side-by-side require 5’ of clear sidewalk space.



Lighting and other furnishings should maintain adequate clear walking space. Ventilation grates and vault covers do not count as clear space.

APPLICATION:

- Recommended or minimum walk zone widths for all street types are established in the *Philadelphia Pedestrian and Bicycle Plan* (see Table 1).

CONSIDERATIONS:

- The average width of a pedestrian is 2.5’ without encumbrances such as bags.
 - Two people need 5’ of clear width to walk side-by-side, and when encountering another person will need about 8’ to pass without moving single file.
 - Pedestrians walking near walls, obstructions, or the curb require extra “shy distance.”

DESIGN:

- Minimum walking zone widths:
 - 5’ in low pedestrian activity areas (e.g., local streets or residential neighborhoods where housing is set back from the sidewalk).
 - 6’ or half the total sidewalk width (whichever is greater) in high pedestrian activity areas (e.g., commercial corridors or row house neighborhoods).
 - 8’ or half the total sidewalk width (whichever is greater) on streets with very heavy pedestrian volumes.
 - 10’ or half the total sidewalk width on streets with great symbolic importance or ceremonial functions (e.g., Broad Street, Market Street, Benjamin Franklin Parkway).
- Some exceptions to minimum walking zone widths are provided in areas that are not High-Volume Pedestrian (3.1) or Civic/Ceremonial (3.2) Streets; but minimum ADA dimensions must always be met.

- Tree pits or raised tree enclosures (4.4.7) may intrude into the walking zone a maximum width of 2’, length of 5’, and minimum spacing of 30’
- Stormwater planters (4.4.9) may intrude into the walking zone a maximum width of 2’, length of 10’, and minimum spacing of 30’.
- Transit shelters (4.6.5) may intrude into the walking zone a maximum of 2’
- Ventilation grates and vault covers do not count as clear space.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavements.

ROLES & RESPONSIBILITIES:

- Property owners are responsible for the maintenance and repair of sidewalks and curbs that abut their property.
- Streets Department may grade, pave, or repair sidewalks and set curbs on any public street in the City, but may only assess abutting property owners 30% of the cost of the work.
- Maintenance issues have arisen with tree grates and trenches in the walking zone as they age.

EXAMPLES:

- Promenade sidewalks with wide walking zones on civic/ceremonial streets (3.2).

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan www.philaplanning.org
- Public Right of Way Access Guidelines <http://www.access-board.gov/prowac/>



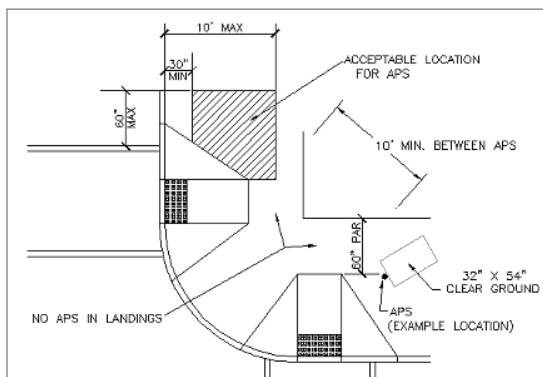
TREATMENT 4.3.3

CURB RAMPS

Curb ramps enable persons with special mobility needs to safely cross the street at designated areas. The Americans with Disabilities Act (ADA) establishes detailed design standards for curb ramps, including minimum widths and maximum slopes and detectable warning surfaces to alert visually impaired pedestrians of the presence of a street crossing.



Color contrasting detectable warning strips must be provided at all ramps.



US Access Board curb ramp design and Accessible Pedestrian Signal (APS) placement guidance.

APPLICATION:

- Appropriate on all street types.
- Required with new development, reconstruction, or alteration of a street.

CONSIDERATIONS:

- When marked crosswalks (4.9.1 and 4.9.2) are provided, curb ramps should be located so that they are within the extension of the crosswalk markings.
- At T-intersections, curb ramps should be installed on the through street at the top of the T, even though there are no street corners.

DESIGN:

- City paving plan guidelines state side curb cut ramp must be installed at all pedestrian crossings.
- Ramps must include a detectable warning surface that complies with the *Public Right of Way Access Guidelines*. The color of warning strips should contrast with surrounding pavement.
- Curb ramps should be in-line with the direction of pedestrian travel to improve wayfinding for visually-impaired pedestrians.
- ADA curb cut ramp design must comply with PennDOT RC-67M and PennDOT Publication 13M (DM-2).

- All ramp designs must be reviewed for approval and acceptance prior to construction by the Streets Department.

GREEN STREET OPPORTUNITIES:

- Consider incorporating with stormwater bumpouts (4.9.4).

ROLES & RESPONSIBILITIES:

- PennDOT and Streets Department construct curb ramps at crossing locations.
- Per its ADA Transition Plan, PennDOT replaces non-ADA compliant curb ramps and removes other physical barriers to access identified by the Department or the public through the grievance procedure.

EXAMPLES:

- Broad St. (controlled crossings)
- 34th & Walnut (uncontrolled crossing)

RESOURCES:

- Streets Department
- PennDOT District 6-0 ADA Curb Design Guidance
- Public Right of Way Access Guidelines <http://www.access-board.gov/provac/>
- PennDOT ADA Transition Plan

**TREATMENT 4.3.4****SHARED/ PEDESTRIAN PRIORITY STREET**

Pedestrian priority streets (also known as shared streets), are narrow streets or alleys that are shared by pedestrians, bicyclists, and low-speed vehicles. These streets create a very low-speed pedestrian-oriented environment that maintains bicycle, local vehicle, and delivery access while providing a high-quality pedestrian environment.



Many narrow streets in Philadelphia function as pedestrian priority streets (above: Elfreth's Alley)



Jessup Street

APPLICATION:

- Typically applied on Shared Narrow (3.10) or Local (3.11) streets in conjunction with traffic calming.
- High pedestrian and low vehicle traffic areas with supportive surrounding land uses and major pedestrian destinations.
- Not applicable on designated freight routes, emergency service routes, or high-volume streets.

CONSIDERATIONS:

- Street users generally negotiate right of way cooperatively, rather than relying on traffic controls.
- This treatment can be used to reduce sidewalk crowding on narrow streets by allowing pedestrians to walk in the street.
- Temporary or permanent street closure to vehicles may be considered on some streets to encourage pedestrian use.

DESIGN:

- Can provide additional public/open space in high-density neighborhoods.
- On right-of-ways greater than 15' wide, pedestrian-only zones should be differentiated from the shared zone using alternative pavement, landscaping, or other amenities. Right-of-ways less than 15' in width do not need to differentiate between separate zones.
- Shared public ways should utilize traffic control and calming strategies to slow traffic and emphasize pedestrian movement, such as:
 - Gateway treatments to emphasize the unique nature of pedestrian priority streets and discourage through traffic.
 - Raising the entrance to the pedestrian priority street to the level of adjacent sidewalks.

- Posting speed limits and other signs that instruct vehicles to yield to pedestrians. Signs should incorporate design that reflects the unique nature/character of the street.
- Using special paving, to distinguish the street's unique function compared to surrounding streets. May create a visual or textural contrast.
- May be curbless, providing a single surface shared by pedestrians, cyclists, and low-speed vehicles. If so, should be designed to drain toward the center of the street or to other stormwater drainage features (4.8.4).

GREEN STREET OPPORTUNITIES:

- Incorporate pervious pavements, stormwater tree pits (4.4.9), or planters (4.4.8).

ROLES & RESPONSIBILITIES:

- Pedestrian priority streets may have unique maintenance needs.
- Streets Department maintains pedestrian priority streets similar to other streets.
- Community organizations or other partners must be engaged to ensure proper programming and management of the space.

EXAMPLES:

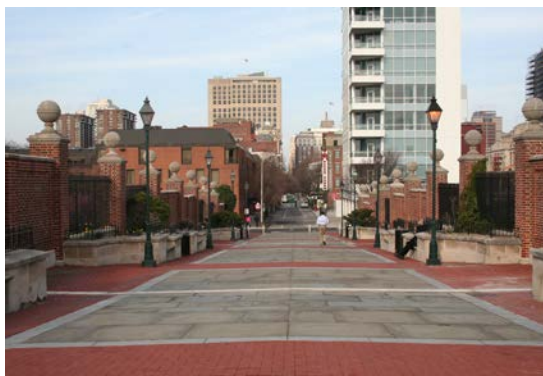
- Elfreth's Alley

RESOURCES:

- NYC Street Design Manual
- San Francisco Better Streets Guide
- NACTO Urban Street Design Guide (forthcoming)

**TREATMENT 4.3.5****FESTIVAL (CURBLESS) STREET**

Festival streets are streets with a single surface shared by pedestrians, bicyclists, and low-speed vehicles. These streets create a very low-speed pedestrian-oriented street that maintains bicycle, local vehicle, and delivery access on most days and can easily be closed for community events or festivals.



Paving materials, landscaping, and street furniture can be used to emphasize the unique nature of festival streets.



A single surface is shared by pedestrians, bicyclists, and low-speed vehicles on festival streets.

APPLICATION:

- Appropriate on many street types with a maximum of two travel lanes in conjunction with traffic calming.
- High pedestrian and low vehicle traffic areas with supportive surrounding land uses and major pedestrian destinations, resulting in many desired pedestrian crossing locations.

CONSIDERATIONS:

- Street users generally negotiate right of way cooperatively, rather than relying on traffic controls.
- Special consideration needed to ensure street can be safely navigated by visually impaired citizens.
- Temporary or permanent street closure to vehicles may be considered on some streets to encourage pedestrian use.

DESIGN:

- Typically curbless, providing a single surface shared by pedestrians, cyclists, and low speed vehicles.
- Accessible path(s) must be provided per PROWAG guidelines and City walking zone recommendations (4.3.2).
- Bollards are often used to separate shared pedestrian-vehicle space from pedestrian-only space.
- Incorporate pedestrian amenities, such as seating (4.4.5), landscaping, pockets of on-street parking (4.6.1), pedestrian lighting (4.4.4), retail displays, or café seating (4.4.6) to help activate the space.
- Can provide additional public/open space in high density neighborhoods.
- On right-of-ways greater than 15' wide, pedestrian-only zones should be differentiated from the shared zone using alternative pavement, landscaping, or other amenities. Right-of-ways less than 15' in width

do not need to differentiate between separate zones.

- Shared public ways should utilize traffic control and calming strategies to slow traffic and emphasize pedestrian movement, such as:
 - Narrowing the entrance to the festival street, using planters (4.4.8), bollards, or other elements. Gateway treatments emphasize the unique nature of festival streets and discourage through traffic.
 - Raising the entrance to the festival street to the level of adjacent sidewalks.
 - Posting speed limits and other signs that instruct vehicles to yield to pedestrians. Signs should incorporate design that reflects the unique nature/character of the street.
 - Using landscaping, parking (4.6.1), or other elements to create chicanes (4.7.3) for vehicle traffic.

GREEN STREET OPPORTUNITIES:

- Should be designed to drain toward the center of the street or to other stormwater drainage features (4.8.4)
- Incorporate pervious surfaces, planters (4.4.8), or other green infrastructure for stormwater management. May require street drainage or catch basin redesign/relocation due to absence of curbs.

ROLES & RESPONSIBILITIES:

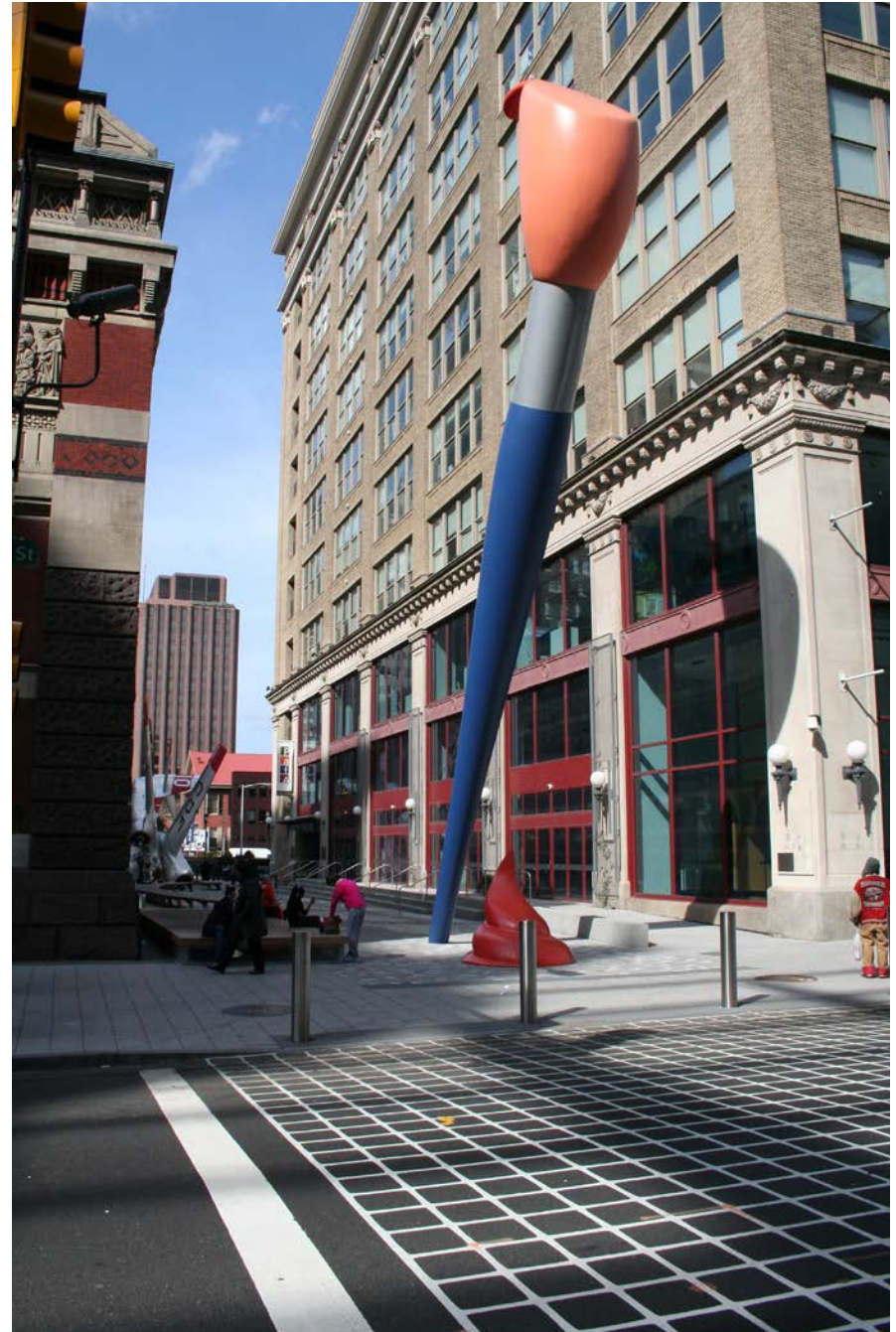
- Festival streets may have unique maintenance needs.
- Streets Department maintains festival streets similar to other streets.
- Community organizations are typically required to maintain and assume liability for street furniture or other community facilities incorporated into the design.
- Community organizations or other partners must be engaged to ensure proper programming and management of the space.

EXAMPLES:

- Not currently used in Philadelphia

RESOURCES:

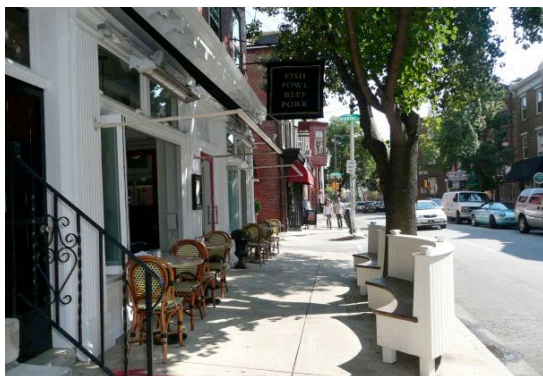
- San Francisco Better Streets Guide
- NACTO Urban Street Design Guide (forthcoming)





4.4 BUILDING & FURNISHING COMPONENT

Street furniture, elements of buildings that intrude into the sidewalk, and commercial activities that occur on the sidewalk (e.g., sidewalk cafes) are addressed in the Building & Furnishing Component. The two main purposes of furnishings and building elements are to (1) buffer pedestrians from traffic and (2) provide amenities and/or enhanced aesthetics. Related items: transit stops and shelters (4.6 Curbside Management Component), construction disruption (4.8 Urban Design Component).



Sidewalk cafes (4.4.6) and other commercial activities on the sidewalk must maintain adequate clear width (4.3.2) for pedestrians.



Awnings, stairs, heating/cooling units, and other architectural elements (4.4.13) can create obstacles for pedestrians on the sidewalk.

FUNDAMENTALS:

- Use furnishings, commercial activities, and architectural elements to enhance the pedestrian environment.
- Maintain adequate clear space (4.3.2) to ensure accessible and comfortable passage for all pedestrians. Building and furnishing elements should not create tripping hazards or pinch points.
- Ensure building, furnishing, and landscaping elements do not reduce visibility at intersections or otherwise decrease pedestrian safety.
- Consider opportunities to incorporate green infrastructure wherever possible in the Furnishing zone.
- Consider utility locations (above and underground) and potential complications when locating furnishings.

POLICY:

- The *Philadelphia Pedestrian & Bicycle Plan* does not include minimum building zone widths (4.4.1), because many existing sidewalks are so narrow.
- The *Philadelphia Pedestrian & Bicycle Plan* recommends minimum furnishing zone widths (4.4.2) of 3 to 5' depending on traffic volume, speed, and the desire for landscaping and other amenities.
- Architectural features such as bay windows, awnings, marquees, steps, and railings are addressed in Philadelphia Code Sections 11-601 to 11-604.
- Commercial activities on streets are addressed in Philadelphia Code Section 9-200.
- The Philadelphia Zoning Code (Chapter 14) outlines requirements for street trees and landscaping (14-705), lighting (14-707), signs (14-900), and other furnishings on public walkways.

- The Philadelphia Green Street Design Manual establishes design guidelines for green infrastructure improvements in the furnishing zone.

ROLES & RESPONSIBILITIES:

- Streets Department Right-of-Way Unit reviews and approves sidewalk encroachments in accordance with section 11-600 of the Philadelphia Code.
- City Planning Commission reviews Streets bills for encroachments and performs façade reviews where required by the Zoning Code.
- Zoning Board of Adjustments must hear all variance requests. Very few administrative adjustments are allowed.
- City Council must approve an ordinance for any street change that is not allowed in section 11-600 of the Philadelphia Code, including variances from the standards for architectural obstructions in the Streets Code.
- The adjacent property owner or a local partner must obtain an ordinance of City Council, enter into a maintenance agreement with the Streets Department, and obtain approval for the installation of most furnishings in the public right-of-way (e.g., trees, benches, lighting).
- Water Department reviews stormwater infrastructure design.



Different pavement treatments can be used to create a pervious walking surface in the furnishing zone. (Note: this space may not count towards ADA clear space requirements.)



The furnishing zone provides a buffer from traffic and can accommodate bike parking, planters, and other amenities.

CONTACTS:

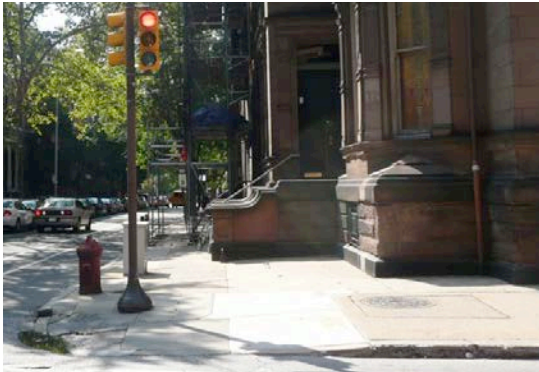
- City Planning Commission
Urban Design Division
Right-of-Way Planner
(215) 683-4615
www.philaplanning.org
- Philadelphia Streets Department
Right-of-Way Unit
(215) 686-5560
www.phila.gov/street
- Zoning Board of Adjustments
(215) 683-4615
www.phila.gov/li

OTHER RESOURCES:

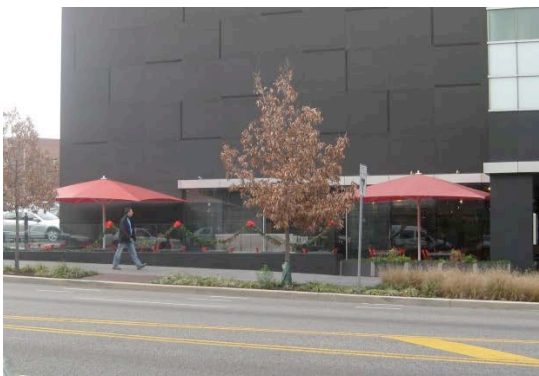
- Philadelphia Green Street Design Manual
- Public Right of Way Access Guidelines
<http://www.access-board.gov/prowac/>

**TREATMENT 4.4.1****BUILDING ZONE WIDTH**

The Building Zone is the area of the sidewalk immediately adjacent to the building face, wall, or fence marking the property line, or a lawn in lower density residential areas. The Building Zone includes architectural elements such as steps, bay windows, or planters (4.4.8) and commercial activities such as sidewalk cafes (4.4.6) that intrude into the sidewalk. These elements can enhance the pedestrian environment, but also narrow the walking zone and can limit accessibility.



Stairs and stoops are common building elements extending into the sidewalk in Philadelphia's historic neighborhoods. Placement of street trees and furnishings must be planned around these features to ensure a clear walking path.



Building setbacks may be adjusted to provide space for street level amenities such as sidewalk cafes without obstructing the clear width of the sidewalk.

APPLICATION:

- No minimum building zone widths are recommended due to the narrow sidewalks in the City.

CONSIDERATIONS:

- Elements in the building zone should enhance the pedestrian environment, but maintain accessible paths for pedestrians.
- On streets where numerous permanent encroachments already exist in the building zone, new encroachments are allowed to the extent that they respect the prevailing alignment of existing encroachments.

DESIGN:

- Building zone obstructions must meet ADA guidelines and maintain the minimum walking/clear zone width on the sidewalk outlined in 4.3.2.
- 3' of clear right-of-way is needed on the side of paths opposite the road on Park Roads and Scenic Drives.
- Building setback serves as building zone on lower density residential streets.
- Additional building setback can be added to new development to create space for sidewalk cafes (4.4.6) and other active street-level uses.
- No obstructions are allowed beyond the line of steps or stoops on Shared Narrow (3.10) and Local (3.11) streets.

GREEN STREET OPPORTUNITIES:

- Consider incorporating planters (4.4.8) and pervious pavements.

ROLES & RESPONSIBILITIES:

- Property owners are responsible for obtaining permits for and maintaining obstructions in the Building Zone.
- Streets Department Right-of-Way Unit reviews and approves sidewalk encroachments.
- Zoning Board of Adjustments must hear all variance requests. Very few administrative adjustments are allowed.
- City Council must approve an ordinance for any street change, including variances from the standards for architectural obstructions beyond the property line in the Streets Code.

EXAMPLES:

- Residential and commercial neighborhood

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan

**TREATMENT 4.4.2****FURNISHING ZONE WIDTH**

The furnishing zone is the area of the sidewalk between the walking zone and curb. The furnishing zone provides pedestrians a buffer from traffic and provides a space for plantings, street furniture, and other amenities. These elements can enhance the pedestrian environment, but also narrow the walking zone and can limit pedestrian mobility and comfort.



Different materials may be used to differentiate the furnishing zone and allow stormwater infiltration.



The furnishing zone provides an area for street trees, planters, and green infrastructure.

APPLICATION:

- Minimum and recommended furnishing zone widths are established for all street types in the Philadelphia Pedestrian and Bicycle Plan.
- Enforcement of a minimum or recommended furnishing zone width in the absence of existing furnishings should be flexible when calculating sidewalk space available for temporary, seasonal, and movable encroachments, such as tables and chairs for outdoor cafes (4.4.6).

CONSIDERATIONS:

- Elements in the furnishing zone should enhance the pedestrian environment, but maintain accessible paths for pedestrians.
- Incorporate green infrastructure features in the furnishing zone wherever feasible.
- The importance of the furnishing zone varies depending on the adjacent land use, speed and volume of traffic, and the presence of on-street parking (4.6.1).
- Furnishings should be located so that they do not impede visibility at intersections or crossing locations.
- Placement of furnishings should consider location of underground utilities and potential complications.

DESIGN:

- A minimum of 3' is usually required just to accommodate utilitarian objects such as fire hydrants, utility poles, and road signs.
- For major arterials, a minimum 5-foot furnishing zone is recommended to ensure adequate separation of pedestrians from vehicles.

- Furnishing zone obstructions must meet ADA guidelines and maintain the minimum walking/clear zone width on the sidewalk outlined in 4.3.2.
- Trees, poles, and other obstructions should not be erected on the sidewalk within 15' of the street line of an intersecting street, unless approved by the Streets Department (Philadelphia Code 11-606)

GREEN STREET OPPORTUNITIES:

- Consider incorporating pervious pavement, planters (4.4.8), stormwater planters (4.4.9), trees, or tree pits (4.4.7).

ROLES & RESPONSIBILITIES:

- Furnishings such as trees, and lighting (4.4.4) may generally be placed in the public right-of-way provided the adjacent property owner or a local partner enters into a maintenance agreement with the Streets Department and obtains a right-of-way license or Council ordinance for the installation.
- Streets Department Right-of-Way Unit reviews and permits sidewalk encroachments including furnishings.
- In many residential areas, the furnishing zone consists of a planting strip.

EXAMPLES:

- Residential and commercial neighborhood

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan



TREATMENT 4.4.3

BICYCLE PARKING

Bicycle parking is an important “end of trip” facility that helps make bicycling a more viable transportation option for multiple trips. Bicycle parking is required in multiple types of developments in Philadelphia and can be permitted by the Streets Department, unlike many furnishings which require an ordinance from City Council.



Unlike “inverted U” or “staple” racks, many older bike rack styles do not allow both the frame and wheel of a bicycle to be easily locked to the rack.



As individual parking meters are replaced with “smart meters”, meter poles may be repurposed as bicycle parking.

APPLICATION:

- Appropriate on all street types.
- Bike parking must be provided with most new development but is not required to be in the public right-of-way.

CONSIDERATIONS:

- Parking should provide adequate space for attached bicycles without impeding upon the minimum side-walk clear width established in 4.3.2 or interfering with safe egress from buildings or facilities.
- Additional bicycle parking, beyond minimums established in the Code, should be provided in high demand areas.
- Streets Department can permit bicycle parking without a City Council ordinance.
- L&I and Streets Department may establish rules, standards, and regulations regarding bicycle parking.
- Bike shelters that provide covered bike parking may be used and should follow design guidance for bicycle parking and bus stop shelters (see SEPTA Manual).

DESIGN:

- Philadelphia Zoning Code Section 14-804 includes bicycle parking ratios and standards.
- All required bicycle parking spaces outside a building must be located within 50' of the primary building entrance, unless they would conflict with another Code provision or are located in the public right-of-way or an attended parking facility.
- Racks must support bicycle frames at two locations, preventing the bicycle from tipping over and enabling the frame and one or both wheels to be secured with a lock.

- If provided, bicycle storage facilities shall be provided with tamper-proof locks.
- Racks should be placed a minimum of:
 - 18 inches from the curb, 3' if poles or other items are in the furnishing zone (4.4.2);
 - 4' from taxi loading areas, poles, tree pits (4.4.7), planters (4.4.8), and fire hydrants;
 - 5' from the nearest bike rack (if both racks are parallel to the curb);
 - 5' from building entrances;
 - 6' from crosswalks; and
 - 30' from a bus stop (4.6.5) sign or the far side of a bus shelter (50' from the bus stop sign or near side of a shelter at stops served by articulated buses).

GREEN STREET OPPORTUNITIES:

- Consider using stormwater planters (4.4.9) or trees (4.4.7) to shade and buffer bicycle parking.

ROLES & RESPONSIBILITIES

- Racks may be placed in the public right-of-way provided the building owner enters into a maintenance agreement with the Streets Department and obtains approval for the installation.
- CCD owns and maintains bike racks and street furniture in select areas (e.g., Market East).

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

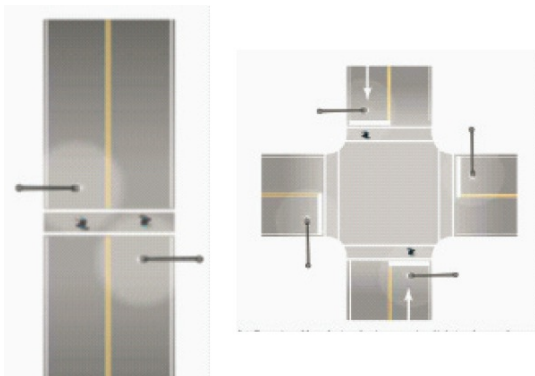
- Philadelphia Pedestrian & Bicycle Plan
- Philadelphia Building Code
- Association of Bicycle and Pedestrian Professionals Bicycle Parking Guidelines

**TREATMENT 4.4.4****LIGHTING**

Street lighting helps to increase visibility of pedestrians and bicyclists, thereby increasing their comfort and safety. Lighting is also viewed as a crime deterrent and can encourage more citizens to walk or bike. Pedestrian scale lighting can be used to supplement or replace standard lights on streets with high pedestrian significance, high expected night usage (e.g., colleges, commercial areas), high pedestrian or bicycle crash rates, and complex geometries (e.g., turns, tunnels).



Examples of pedestrian-scale lights and “Brown round” cobra head light (paired with decorative pedestrian – scale light).



Preferred lighting layout for pedestrian crossings at midblock and intersection locations (source: FHWA).

APPLICATION:

- Appropriate on all street types.
- Pedestrian-scale lighting most appropriate on High Volume Pedestrian (3.1), Civic/Ceremonial (3.2), Walkable Commercial (3.3), and City Neighborhood Streets (3.8).

CONSIDERATIONS:

- There are no industry standard warrants for non-freeway lighting.
- Negative impacts of “light pollution,” glare, and electricity consumption should be considered.
- Luminaires should be placed adjacent to facilities crossing roadways, as opposed to directly above the facility, to better illuminate pedestrians and bicyclists to approaching motorists.
- Lighting design and installation must be coordinated with relevant utilities (4.8.2).
- Poles should maintain adequate vertical (8') clearance and minimum clear zone width on sidewalks (See 4.3.2).

DESIGN:

- There are two standard streetlight fixtures used by the Streets Department:
 - “Brown round” improved cobra heads for lighting wider streets.
 - “Pedestrian-scale lights” for streets where pedestrian lighting is desired.
- Streets Department Street Lighting Engineer determines the exact locations of street light poles during construction.
- Standard distance between street light poles is 60' for pedestrian-scale lights and 90-100' for brown rounds.
- Lighting should meet IES standards.

GREEN STREET OPPORTUNITIES:

- Consider solar powered lights.

ROLES & RESPONSIBILITIES:

- Streets Department will only own, power, and maintain standard fixtures that illuminate the street. All other fixtures must be separately funded and maintained.
- Pedestrian-scale lights may be placed in the public right-of-way provided a local partner (e.g., property owner, community development group) enters into a maintenance agreement with the Streets Department and obtains approval for the installation.
- CCD has installed and maintains lights in select areas (e.g., Market East) where it has obtained funding through Council, property owners, or other means. CCD maintains their light globes; Streets maintains the light poles and pays for electricity.

EXAMPLES:

- Center City District

RESOURCES:

- Streets Department Street Lighting Division Contact
- New York Street Design Manual
- FHWA Report on Lighting Design for Midblock Crosswalks
- AASHTO or Illuminating Engineering Society (IES) Roadway Lighting Design Guide



TREATMENT 4.4.5

BENCHES & STREET FURNITURE

Street furniture includes benches, seating, and other furniture items located in the furnishing zone. Benches provide an important amenity for all pedestrians, but must be placed to preserve accessibility.



A wide variety of bench, trash receptacle, and other street furnishings are used throughout the City.



Large planters can be used to provide seating and green infrastructure in some areas.

APPLICATION:

- Appropriate on all street types.
- Most appropriate in areas with high pedestrian significance such as Walkable Commercial Corridors (3.3), transit stops (4.6.5), plazas, and Civic/Ceremonial streets (3.2).

CONSIDERATIONS:

- Benches and street furniture should be located so that they maintain minimum clear walking space widths (see 4.3.2) and do not create pinch points or tripping hazards.
- Benches at transit stops (4.6.5) should not interfere with passenger boarding/alighting, including loading and unloading wheelchair lifts.
- Benches that are not anchored to the sidewalk should be stored inside the building when the associated business is closed.

DESIGN:

- There is no standard City design for benches in the right-of-way. Fairmount Park has a standard bench for park use.
- Advertisements on benches are prohibited.
- The SEPTA Stop Design Guidebook will include design guidance for benches at transit stops.
- Right-of-way permit required.

GREEN STREET OPPORTUNITIES:

- Consider using raised planters (4.4.8) to provide seating and green infrastructure.

ROLES & RESPONSIBILITIES:

- Benches may be placed in the public right-of-way provided an ordinance has been acquired and a local partner (e.g., property owner, community development group) enters into a maintenance agreement with the Streets Department and obtains approval for the installation.
- CCD owns and maintains benches and street furniture in select areas (e.g., Market East).

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

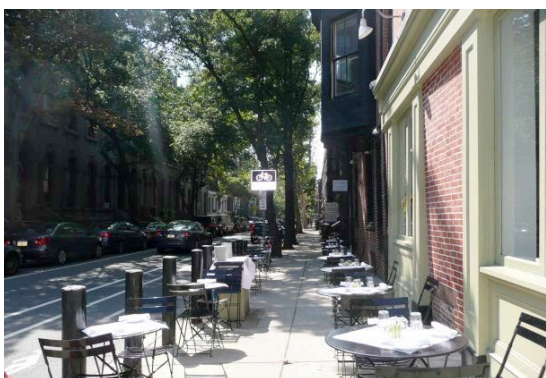
- SEPTA Stop Design Guide

**TREATMENT 4.4.6****SIDEWALK CAFES**

Sidewalk cafes consist of any seasonal and movable restaurant seating or furnishings that are located on sidewalks or in the public right of way. Sidewalk cafes help to “activate” the sidewalk and provide a valuable neighborhood amenity, but must be regulated to ensure that adequate clear width is maintained for the expected level of pedestrian activity, based on the street type.



No heaters, signs, umbrellas or other portions of sidewalk cafes may not extend onto or project over the minimum clear sidewalk width unless at least 7' vertical clearance is maintained



Sidewalk cafes on most streets should leave 6' or half the total sidewalk width clear at all times.

APPLICATION:

- Most appropriate on Civic/Ceremonial (3.2), Walkable Commercial Corridors (3.3), City Neighborhood Streets (3.8), and Urban Arterials (3.4).
- Also appropriate in some circumstances on most other street types, including High-Volume Pedestrian Streets (3.1).

CONSIDERATIONS:

- Placement should consider space needed to accommodate café furnishings, server and customer circulation, and pedestrians traveling along the sidewalk.
- Placement should consider nearby transit stop and subway entrance locations.
- No owner or operator of an establishment shall occupy any portion of a public sidewalk or other public right of way with tables and seats without first obtaining a Sidewalk Café Permit. Café permits are revocable based on changing conditions.
- Because open-air sidewalk cafes are seasonal and movable, the calculation of the required Walking Zone adjacent to a café may include space available in the Furnishing Zone; however, each year with the renewal application, the space available for any sidewalk café may change based on changing conditions in the Furnishing Zone.

DESIGN:

- Requirements for sidewalk cafes are addressed in the Philadelphia Code chapter 9-208, and include a minimum sidewalk clear width of no less than half the total sidewalk width or, on sidewalks less than 13' wide, no less than 5'.
- Minimum clear width recommended for sidewalk cafes, as outlined in 4.3.2, ranges from 5' on streets with few pedestrians, to 10' on Civic/Ceremonial

Streets (3.2). Most streets need clear width of 6' or half the total sidewalk width. Minimum clear width is exclusive of grates and vault covers.

- Fixed markers, flush with the sidewalk, should be used to demarcate sidewalk cafes' maximum surface area.
- Sidewalk cafes at street intersections must maintain a minimum clearance of 10' from the point of tangency of the curb line.
- Platforms, railings, or other permanent fixtures for sidewalk cafes are not recommended.

GREEN STREET OPPORTUNITIES:

- Incorporate pervious pavement or utilize “parklet” design in parking lane (4.6.1).

ROLES & RESPONSIBILITIES:

- Property owners are responsible for maintaining and insuring sidewalk cafes.
- Streets Department Right-of-Way Unit reviews and provides preliminary approval of sidewalk cafe locations.
- The Department of Licenses and Inspections issues and enforces Sidewalk Cafe Permits.
- Streets Department and Licenses and Inspections approve and adopt regulations for the design and placement of permitted tables and seats.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan

**TREATMENT 4.4.7****STREET TREES & TREE TRENCHES**

Street trees are trees planted in the public right-of-way, whether in individual tree pits or trenches. Street trees help beautify the urban environment, provide shade, filter noise and air pollution, and absorb storm water. Street trees planted between the sidewalk and curb in Philadelphia are managed by the Fairmount Park Commission Street Tree Management Division.



Tree pits should maintain adequate clear walking space and provide room for trees to grow without pushing up adjacent pavement.



Tree trenches can accommodate multiple trees and may be connected to an underground infiltration structure.

APPLICATION:

- Appropriate on all street types.

CONSIDERATIONS:

- Street trees and tree pits should be located so that they maintain minimum clear walking zone widths (see 4.3.2) at the time of installation and as trees grow.
- Walkable tree grates, permeable pavers, and structural soil should be used and maintained to ensure that tree pits do not create pinch points or tripping hazards.
- Trees with narrow canopies that do not reduce intersection visibility should be considered in curb extensions (4.9.4) and medians (4.7.3).
- Tree placement and species choice should consider the location of above and underground utilities (4.8.2) (e.g., use trees with low canopies under overhead wiring).
- Trees should not be planted in front of steps, doorways, or alleyways.

DESIGN:

- Tree pit and trench dimensions vary depending upon site conditions. Standard width for tree wells is 4' from the face of the parallel curb, required minimum tree pit size is 3'x3'.
- Street trees shall not be placed within 55' of the approach of an intersection where no parking or bike lane is present, 45' where a parking or bike lane is present, or 35' of the exit of any intersection.
- Location and type of street tree must be coordinated with the Department of Parks and Recreation (PPR).

GREEN STREET OPPORTUNITIES:

- Stormwater tree pits and trenches should be considered (see sidebar and Green Street Design Manual).

ROLES & RESPONSIBILITIES:

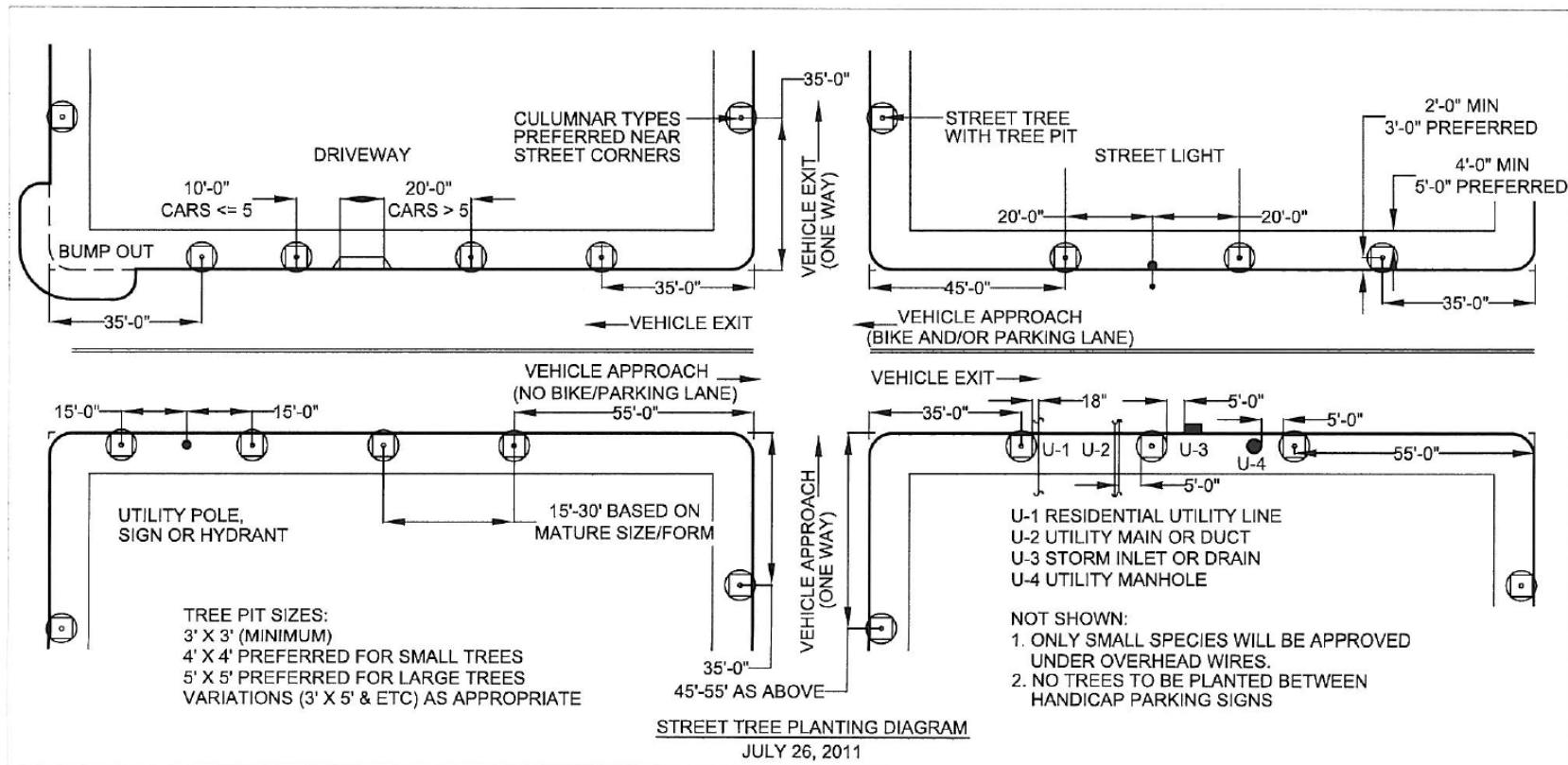
- Department of Parks and Recreation (PPR) manages all park and street trees in Philadelphia. The Street Tree Management Division plants new trees (after an arborist conducts an inspection and obtains a signed permission form from the adjacent property owner), inspects trees for removal or pruning, and removes fallen trees or branches blocking sidewalks or streets.
- Most tree planting, pruning, and removal is done by arborists contracted by PPR.
- Tree placement and species review is permitted and approved by Parks and Recreation.
- Street opening permits for new tree pits or trenches are approved by Streets Department.
- PPR inspects street trees that are breaking up the sidewalk on a case-by-case basis and may recommend the property owner replace the paving.
- Adjacent property owners are responsible for watering street trees and keeping tree pits clear, but must obtain a permit to prune or remove trees.
- L&I inspects and enforces tree problems in alleys and on private property.
- CCD maintains (waters and prunes) and replaces dead street trees in Center City.

EXAMPLES:

- Stormwater tree trench at West Mill Creek, Ogden and Ramsey Street

RESOURCES:

- Green Street Design Manual
- Recommended Street Tree List
- Fairmount Park Street Tree Management Division
- http://www.phillywatersheds.org/doc/ModelNeighborhoods/Street_Tree_FAQ.pdf
- <http://www.phila.gov/green/buildersGuide.html>
- http://phillywatersheds.org/what_were_doing/green_infrastructure/tools/stormwater_tree_trench



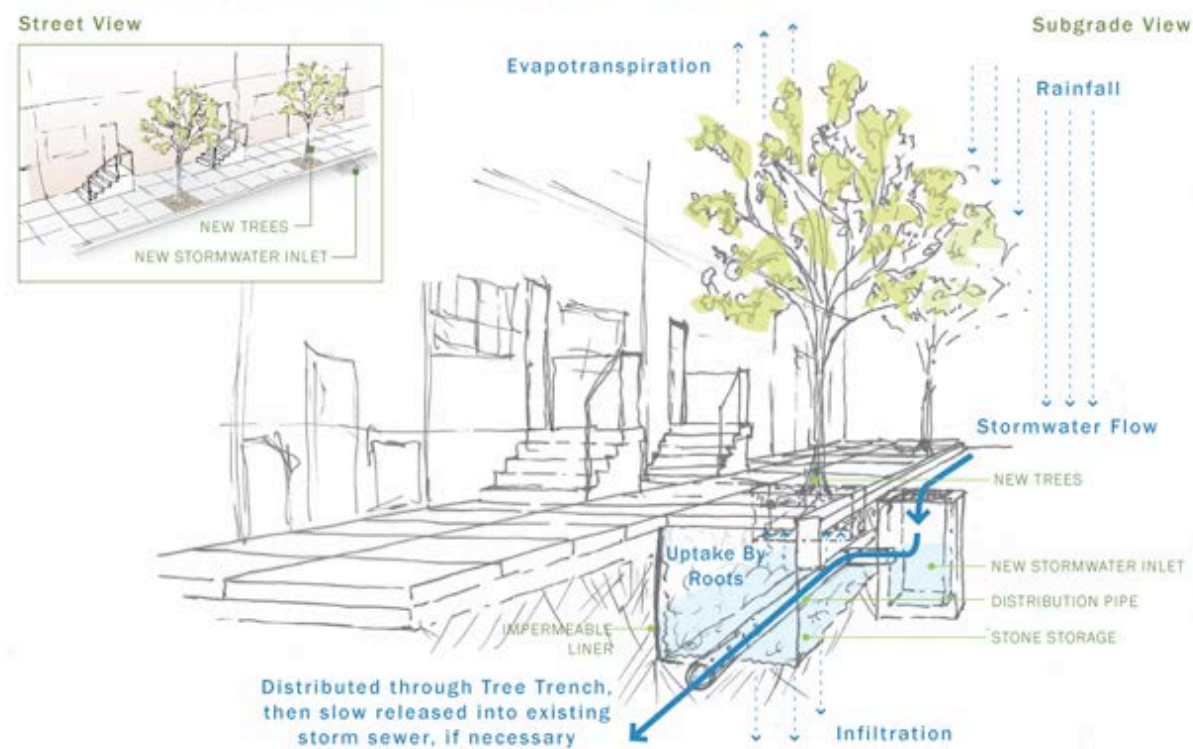
STORMWATER TREE TRENCHES

“A stormwater tree trench is a system of trees that are connected by an underground infiltration structure. On the surface, a stormwater tree trench looks just like a series of street tree pits. However, under the sidewalk, there is an engineered system to manage the incoming runoff. This system is composed of a trench dug along the sidewalk, lined with a permeable geotextile fabric, filled with stone or gravel, and topped off with soil and trees. Stormwater runoff flows

through a special inlet (storm drain) leading to the stormwater tree trench. The runoff is stored in the empty spaces between the stones, watering the trees and slowly infiltrating through the bottom. If the capacity of this system is exceeded, stormwater runoff can bypass it entirely and flow into an existing street inlet.”

- Phillywatersheds.org

GREEN STREETS: STORMWATER TREE TRENCH





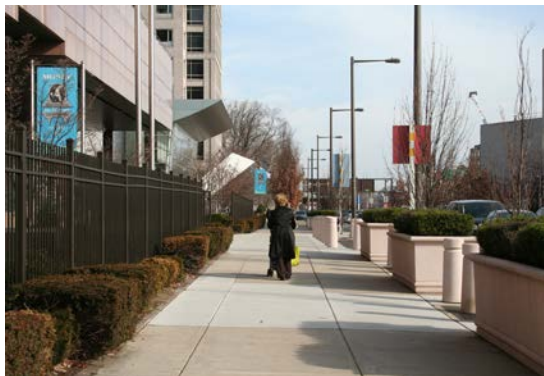
TREATMENT 4.4.8

PLANTERS

Planters help to beautify streets by providing green space, buffering sidewalks from the street, and absorbing stormwater.



Planters can be used to provide seating and green infrastructure.



Planters should be located to maintain minimum walking zone widths (4.3.2).

APPLICATION:

- Appropriate on all street types.

CONSIDERATIONS:

- Planters should be located so that they maintain minimum clear walking zone widths (see 4.3.2) and do not create pinch points or tripping hazards.
- Planters should be considered in curb extensions (4.9.4) and medians (4.7.3), and the furnishing zone.
- Planter placement should consider the location of underground utilities (4.8.2).
- Planter design must consider passenger and wheelchair accessibility at transit stops (4.6.5).

DESIGN:

- Planter dimensions vary depending upon site conditions. Standard width for planting strips is 4' from face of parallel curb, required minimum width is 3'.
- The Philadelphia Zoning Code requires a 3' planter strip along all blocks in new subdivisions, but the Streets Code does not require planters on existing streets.

GREEN STREET OPPORTUNITIES:

- Consider incorporating stormwater planters (4.4.9).

ROLES & RESPONSIBILITIES:

- Street opening permits for planters and stormwater planters are approved by Streets Department.
- Raised planters in sections of the City require an ordinance from City Council.
- In Center City, the Streets Right-of-Way Unit may approve placement of planters without a City ordinance. (Section 10-611 (2)(k)) CCD owns and maintains over 100 planters in Center City.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- Philadelphia Green Street Manual

**TREATMENT 4.4.9****STORMWATER PLANTERS**

Stormwater planters are specialized planters installed in the sidewalk area or median, and are designed to manage stormwater runoff by providing storage and infiltration.



Curb inlets allow stormwater to flow into planter strips.

APPLICATION:

- Appropriate on all street types.

CONSIDERATIONS:

- Stormwater planters should be located so that they maintain minimum clear walking zone widths (see 4.3.2) and do not create pinch points or tripping hazards.
- Stormwater planters should be considered in curb extensions (4.9.4) and medians (4.7.3), and the furnishing zone
- (4.4.2).
- Planter placement should consider the location of underground utilities (4.8.2).
- Planter design must consider passenger and wheelchair accessibility at transit stops (4.6.5).

DESIGN:

- Stormwater planters are generally rectangular with four concrete “curbed” sides and inlets that allow runoff to flow into the planter. The planter is lined with permeable fabric, gravel, and soil and filled with plants and/or trees. Soil in the planter is lower in elevation than the sidewalk to provide storage space for runoff.
- Planter dimensions vary depending upon site conditions. Standard width for planting strips is 4’ from face of parallel curb, required minimum width is 3’.

ROLES & RESPONSIBILITIES:

- Philadelphia Water Department, Streets Department, and Parks and Recreation have partnered with communities to design stormwater planters.
- Street opening permits for planters and stormwater planters are approved by Streets Department.
- PWD maintains stormwater planters that are owned/operated by PWD.
- Stormwater planters installed without PWD approval are the responsibility of the installer.

EXAMPLES:

- Stormwater planters at Columbus Square (1300 Reed St.)
- Stormwater bumpouts at Queen Lane (3100-3300 W Queen Ln)

RESOURCES:

- Philadelphia Green Street Manual
- http://phillywatersheds.org/what_were_doing/green_infrastructure/tools

**TREATMENT 4.4.10****TRASH BINS & HONOR BOXES**

Trash bins, recycling bins, honor boxes, phones, and other service furnishings on the sidewalk provide a public service and amenity. They can help to keep streets clean, but also require regular maintenance and must be located so as not to obstruct the walking zone or limit accessibility.



Trash and recycling bins provide a convenience amenity but must generally be emptied at least once per week.



Honor box "corrals" in Center City are owned by the City and managed by the Center City District.

APPLICATION:

- Appropriate in areas with high pedestrian volumes such as Walkable Commercial Corridors (3.3) and transit stops (4.6.5).
- In residential zones, trash bins should be placed where they can be serviced along residential trash collection routes.

CONSIDERATIONS:

- Trash bins should not be installed without a maintenance plan for regular trash pick-up.
 - "Big Belly" bins, typically installed in commercial corridors with heavy pedestrian activity and near transit stops, must be emptied once per week.
 - Other bins generally must be emptied three times per week.
- Permanent or movable honor box "corrals" may be used to delineate the sidewalk area where honor boxes are permitted.
- "Condo style" newspaper boxes may be considered for use in high demand areas.

DESIGN:

- Trash bins and honor boxes must be located so that they maintain minimum clear walking zone widths (see 4.3.2), do not create pinch points or tripping hazards, and follow L&I regulations.
- Trash bins and honor boxes at transit stops should not interfere with passenger boarding/alighting, including loading and unloading wheelchair lifts.
- There is no standard City design for waste receptacles in the right-of-way.
- There is no standard City design for honor boxes.

GREEN STREET OPPORTUNITIES:

- Solar powered trash -ompaacting waste receptacles may be used to reduce the frequency of collection.

ROLES & RESPONSIBILITIES:

- Streets Department Sanitation Unit is responsible for emptying trash bins and maintaining "Big Belly" bins, including removing graffiti.
- Honor boxes are owned by the newspaper and magazine publishers. Honor box owners are required to keep their boxes clean and free of graffiti.
- L&I is responsible for permitting and enforcing placement of honor boxes and trash bins.
- Honor box "corrals" in Center City are owned by the City and managed by CCD.

EXAMPLES:

- Honor box "corrals" on Arch St. near the Convention Center.
- Solar powered trash and recycling bins throughout Center City.

RESOURCES:

- Streets Department website



TREATMENT 4.4.11

NEWSSTANDS

Newsstands are stationary structures used for the sale and display of newspapers, magazines, and periodicals. Newsstands are staffed by an attendant, unlike honor boxes that can be operated by customers independently. Newsstands provide a convenient commercial service, but must be regulated to ensure that adequate clear width is maintained for the expected level of pedestrian activity, based on the street type.



This newsstand technically provides adequate clear walking space, but does not account for space needed for waiting customers.



This newsstand provides adequate space to serve customers, while allowing other pedestrians to pass by.

APPLICATION:

- Civic Ceremonial Streets (3.2), Urban Arterials (3.4), and Walkable Commercial Corridors (3.3).
- Appropriate on some High-Volume Pedestrian Streets and City Neighborhood Streets

CONSIDERATIONS:

- Placement should consider space needed to accommodate customers waiting in line and pedestrians traveling along the sidewalk.

DESIGN:

- Requirements for commercial activities on streets, including newsstands, are addressed in the Philadelphia Code chapter 9-200, and include a minimum clear width of 6' on the sidewalk.
- Minimum clear width recommended for newsstands, as outlined in 4.3.2, ranges from 5' on streets with few pedestrians, to 10' on Civic/Ceremonial Streets (3.2). Most streets need clear width of 6' or half the total sidewalk width.
- Only one newsstand can be located on any corner.
- No more than two newsstands can be located at any intersection or on any one side of a blockface.

ROLES & RESPONSIBILITIES:

- Streets Department Right-of-Way Unit reviews and approves sidewalk encroachments.
- Licenses and Inspections enforces newsstand licensing and placement.

EXAMPLES:

- Residential and commercial neighborhood

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan

**TREATMENT 4.4.12****VENDORS**

A vendor is any person or vehicle that travels from place to place, carrying, conveying, or transporting goods, wares or merchandise for sale or making sales and delivering articles to purchasers. Vendors include wagons, handcarts, pushcarts, motor vehicles, and mobile stands. Vendors provide a convenient commercial service, but must be regulated to ensure that adequate clear width is maintained for the expected level of pedestrian activity, based on the street type.



Like newsstands (5.2.2), vendors should be located to provide adequate space for customers to be served, while allowing other pedestrians to pass by.

APPLICATION:

- Most appropriate on Walkable Commercial Corridors (3.2), and Urban Arterials (3.4).
- Also appropriate in some circumstances on a range of other street types, including High-Volume Pedestrian Streets (3.1) and City Neighborhood Streets (3.8).

CONSIDERATIONS:

- Placement should consider space needed to accommodate customers waiting in line and pedestrians traveling along the sidewalk.

DESIGN:

- Requirements for commercial activities on streets, including vendors, are addressed in the Philadelphia Code chapter 9-200, and include a minimum clear width of 6' outside Center City, and 6.5' in Center City.
- Minimum clear width recommended for vendors, as outlined in 4.3.2, ranges from 5' on streets with few pedestrians, to 10' on Civic/Ceremonial Streets (3.2). Most streets need clear width of 6' or half the total sidewalk width.
- Vendors in Center City may not operate at any location:
 - Within 10' of building lines, or a newsstand;
 - Less than 25' upstream of any bus stop sign;
 - 10' upstream of any subway entrance/exit;
 - Within 15' of any means of egress from a building, any midblock crosswalk, or any alley or driveway; or
 - Within 5' of where curbs have been depressed to facilitate pedestrian or vehicular movement.
- Vendors outside Center City must be no closer than 10' from "the intersection of the legal building line,

produced of the intersecting streets or sidewalks."

- Special sidewalk vending districts with unique rules are located in the Central Germantown and University City Districts.

ROLES & RESPONSIBILITIES:

- Licenses and Inspections enforces vendor licensing and placement.

EXAMPLES:

- Residential and commercial neighborhood

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan



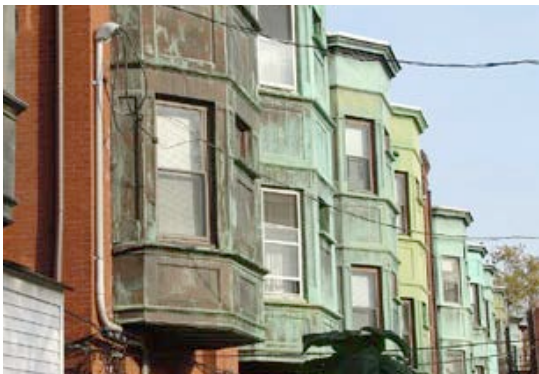
TREATMENT 4.4.13

ARCHITECTURAL FEATURES

Architectural features include bay windows, awnings, marquees, steps, railings, and other building elements that extend into the sidewalk or public right-of-way. Architectural features can enhance the visual interest of a street, but must be regulated to ensure that adequate clear width is maintained for the expected level of pedestrian activity, based on the street type.



Many entry stairways to Philadelphia rowhouses extend into the pedestrian zone.



Bay windows may not extend onto or project over the minimum clear sidewalk width unless at least 10' vertical clearance is maintained.

APPLICATION:

- All street types.
- Most common on City Neighborhood Streets (3.8) where stoops and stairs are prevalent on historic rowhomes.

CONSIDERATIONS:

- In many rowhome neighborhoods, stairs and stoops prevent streets from providing minimum clear sidewalk width. In these areas it is particularly important to carefully consider the placement of street trees (4.4.7) and other furnishings to provide the widest feasible walking zone (4.3.2).
- Wheelchair ramps (from the sidewalk to building entrances) are not currently addressed in the Philadelphia Code.
 - Ramps are considered by the right-of-way unit to be a form of "steps" and thus, a permissible encroachment under 11-604.
 - Ramps should be constructed to allow a minimum clear width in the walking zone, as outlined in 4.3.2, ranging from 5' on streets with few pedestrians to 10' on Civic/Ceremonial Streets. Most streets need clear width of 6' or half the total sidewalk width.

DESIGN:

- Requirements for architectural features in the right-of-way, including bay windows, marquees, awnings, steps, and railings, are addressed in the Philadelphia Streets Code sections 11-601 to 11-604.

ROLES & RESPONSIBILITIES:

- Streets Department Right-of-Way Unit reviews and approves sidewalk encroachments.
- City Planning Commission performs façade reviews where required by the Zoning Code.

- Zoning Board of Adjustments must hear all variance requests. Very few administrative adjustments are allowed.
- City Council must approve an ordinance for any street change, including variances from the standards for architectural obstructions beyond the property line in the Streets Code.

EXAMPLES:

- Residential and commercial neighborhood

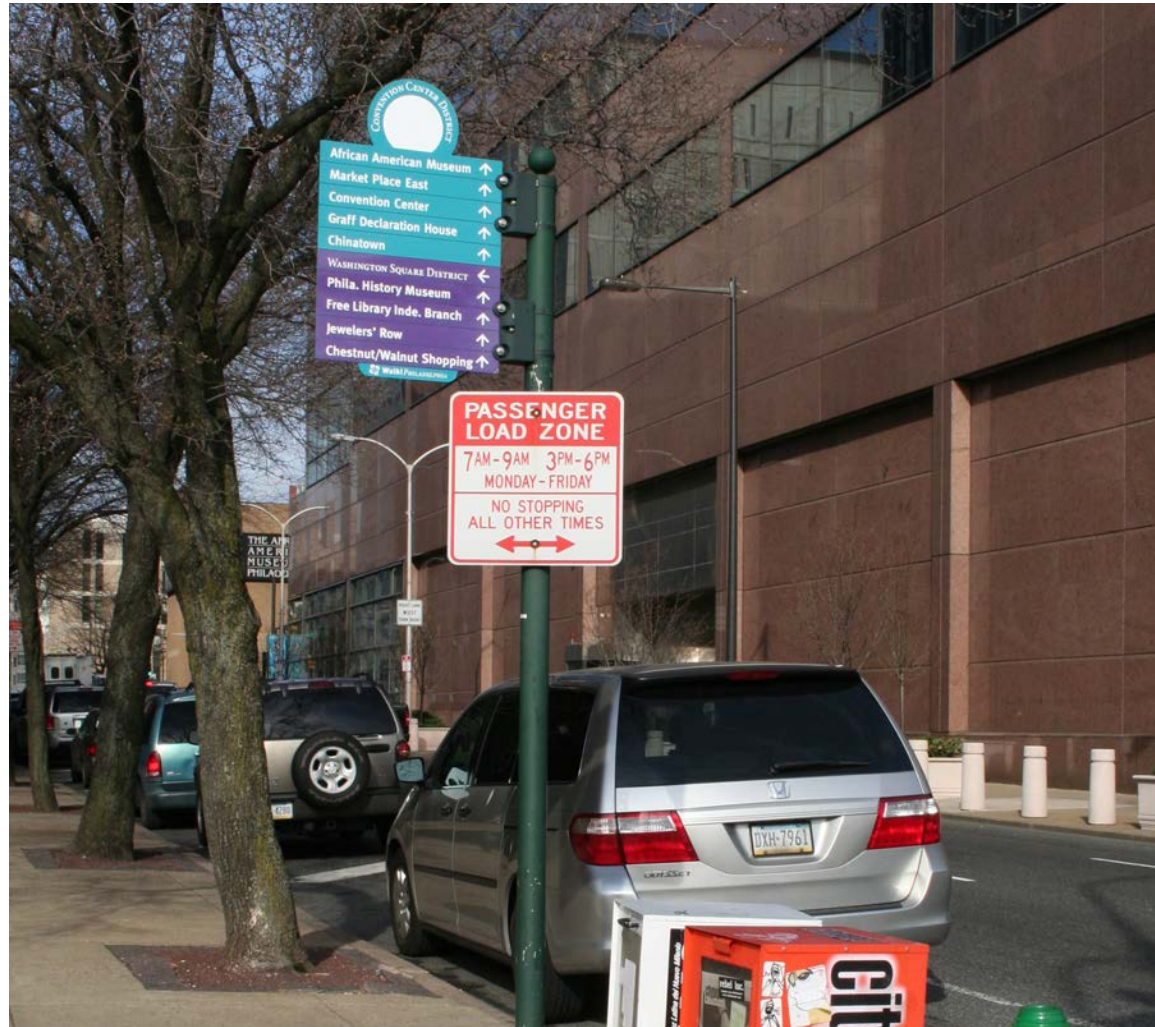
RESOURCES:

- Zoning Code

STREET SIGNS

Many signs are located in the right-of-way in Philadelphia that are owned, installed, and maintained by a variety of groups.

- Traffic control signs – (e.g., STOP signs, regulatory signs) - These signs are installed and maintained by Streets Department or PennDOT. The MUTCD regulates what traffic control signs can be used and their placement.
- District signs – Center City District and University City District own and maintain many signs in the right of way, including Walk Philadelphia, Direction Philadelphia, and Transit Portal signs. They also own and maintain hanging baskets and banners hung from light and sign poles.
- Parking signs – Signs and poles are owned and maintained by the Philadelphia Parking Authority.
- Historic markers – owned and maintained by PHMC.
- Fairmount Park Signs and Interpretive System – responsibility for these signs is shared by the City, CCD and Parks and Rec.



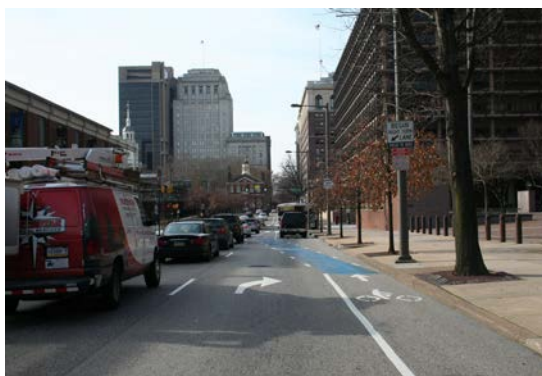


4.5 BICYCLE COMPONENT

The Bicycle Component addresses bikeways and other facilities within the public right-of-way that accommodate bicycle travel, such as pavement markings and signage. Related items: on-street bicycle parking (4.6 Curbside Management Component), off-street bicycle parking (4.4 Building & Furnishing Component), bike boxes and signals (4.9 Intersection Component).



Buffered bike lanes (4.5.3) on Pine Street provide additional protection and comfort for cyclists.



Colored pavement (4.5.10) can be used to increase visibility of potential bicycle/vehicle conflict zones. Green color must be used for all future applications.

FUNDAMENTALS:

- Connect bicycle facilities to local bicycle and transit networks.
- Provide convenient bicycle connections to residences, work places, and other destinations.
- Select appropriate bicycle facility design based on local street context; design should always be selected to maximize the comfort and safety of bicycling as a transportation option.

POLICY:

- The Philadelphia Pedestrian & Bicycle Plan recommends the following bicycle facility types for consideration in the City:
 - Bike Lanes (4.5.1 – 4.5.5)
 - Cycle Tracks (4.5.6)
 - Shared-Use Paths (4.5.7)
 - Bicycle Friendly Streets (4.5.8)
 - Marked Shared Lanes (4.5.9)
- Bicycle specific signs may be installed in accordance with current MUTCD standards.

ROLES & RESPONSIBILITIES:

- Mayor's Office of Transportation and Utilities coordinates all improvements to the bicycle network.
- City Planning Commission develops the bicycle plan and integrates proposed bicycle network changes with development proposals and neighborhood and district plans.
- Streets Department constructs and maintains bicycle facilities in the public right-of-way and issues permits to property owners for bicycle facilities in the right-of-way.

CONTACTS:

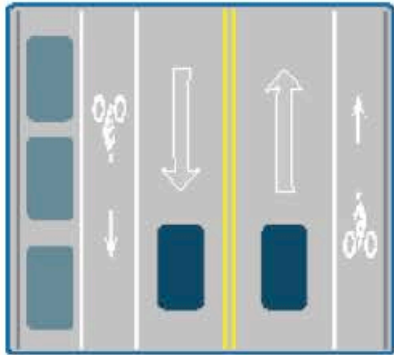
- Mayor's Office of Transportation and Utilities Bicycle and Pedestrian Coordinator, (215) 686-9003 www.phila.gov/streets/Bike_Network.html
- City Planning Commission Pedestrian and Bicycle Plan Project Manager, (215) 683-4643, www.philaplaning.org

OTHER RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan: www.philaplaning.org
- NACTO Urban Bikeway Design Guide www.nacto.org/cities
- AASHTO Guide for the Development of Bicycle Facilities
- MUTCD www.mutcd.fhwa.dot.gov

**TREATMENT 4.5.1****CONVENTIONAL BIKE LANES**

Conventional bike lanes designate a portion of the roadway for the exclusive use of bicycles. Bike lanes are typically located on the right side of the road adjacent to motor vehicle traffic moving in the same direction.



Conventional bike lane design in Philadelphia Pedestrian & Bicycle Plan.



Bike lane word and/or symbol pavement markings should be used to help define bike lanes per MUTCD guidance (MUTCD 9C-3).

APPLICATION:

- Bike lanes should be considered on two-way arterial and collector streets wide enough to accommodate a bike lane in both directions, and one-way streets with enough width for a single bike lane.
- Bike lanes are most helpful on streets with average daily motor vehicle traffic equal to or over 3,000 or posted speeds of 25 mph or greater.
- Bike lanes may be a desirable addition on all but local and high-speed roads. The decision to install bike lanes should stem from a comprehensive bike plan.

CONSIDERATIONS:

- Bike lanes allow bicyclists to travel at their preferred speed with limited interference from motorists.
- Bike lanes increase bicyclist comfort and confidence, and remind motorists of bicyclists' right to the street.
- Like any other traffic lane located at the curb, a bike lane may be used for short-term loading activity unless it is posted for No Stopping Any Time.
- In areas of heavy vehicle congestion, wider bike lanes may be used illegally by motor vehicles.

DESIGN:

- Minimum and desired bike lane widths are established by the Philadelphia Bicycle Plan.
- When next to on-street parking (4.6.1) or roadways with speeds of 30 mph or more, bike lanes should be at least 5' wide. 6' wide lanes should be installed where feasible.
- A solid white lane line marking (6-8 inches) should be used to separate motor vehicle travel lanes from the bike lane.
- Bike lane markings should be dashed where

vehicles are allowed to merge into the bike lane, such as for right turns or at bus stops.

- Bicycle lane word and/or symbol markings should be used to help define bike lanes.
- MUTCD bike lane signs may be used, but may create sign clutter.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Lanes should be kept free of potholes, broken glass, and other debris.
- Lane lines and markings should be maintained.
- Bike lanes should be plowed clear of snow.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.2****LEFT-SIDE BIKE LANES**

Left-side bike lanes are conventional bike lanes located on the left side of one-way streets or two-way streets divided by a median. They are typically used on streets with heavy activity on the right side of the roadway.



Typical left-side bike lane design (NACTO)



Potential Signage (NACTO, Modified MUTCD R3)

APPLICATION:

- Left-side bike lanes are typically used on one-way or median divided streets with the following:
 - Frequent bus stops or truck unloading on the right side;
 - High parking turnover;
 - High volume of right turns by motor vehicles;
 - Significant number of left-turning bicyclists; and
 - Traffic entering into an added lane on the right-hand side (e.g., from a freeway off-ramp).
- Left-side bike lanes can also be used to connect to a path or other bicycle facility.
-

CONSIDERATIONS:

- Avoids right-side bike lane conflicts on streets with buses, trucks, and parked vehicles; improves visibility of bicyclists by positioning them on the driver's side.
- Vehicles may not expect bicyclists on the left side of the road.
- Bicyclists may not expect bike lanes on the left side of the road and, out of confusion, ride the wrong way.
- Signs and special intersection treatments are needed to alert bicyclists and motorists to left-side bike lanes.
- Left-side bike lanes require additional design considerations and treatments where streets change from one-way to two-way travel.

DESIGN:

- Design guidelines for conventional bike lanes apply.
- Signs to clarify use recommended to reduce wrong-way riding.

- Bike boxes (4.9.10), bike signals (4.9.9), and other intersection treatments recommended to transition between left-side bike lanes and right-side bike lanes.
- Bicycle through lanes should be provided to the right of left turn pockets at intersections to minimize conflicts between bicyclists and turning vehicles.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

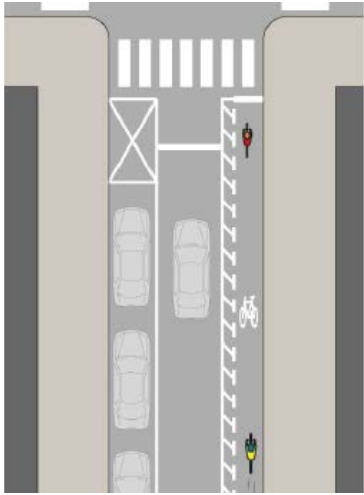
- 11th and 12th Street in North Philadelphia near streetcar tracks

RESOURCES:

- DVRPC Bus/Bike Conflict Area Study
- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.3****BUFFERED BIKE LANES**

Buffered bike lanes are conventional bike lanes with a designated buffer space separating the bicycle lane from adjacent lanes for motor vehicles or parking. They can be used to create a larger space for bicyclists without potentially causing the bike lane to look like a travel lane or parking lane for motor vehicles.



Philadelphia Pedestrian & Bicycle Plan



Bike lane word and/or symbol pavement markings should be used to help define buffered bike lanes per MUTCD guidance (MUTCD 9C-3).

APPLICATION:

- Buffered bike lanes should be considered on streets with high traffic volumes, speeds, or truck travel.
- Space may be reallocated on streets with extra lanes or lane width to accommodate buffered bike lanes.

CONSIDERATIONS:

- Buffered bike lanes provide greater comfort and perceived safety for bicyclists, increase shy distance between motor vehicles and bicyclists, and provide space for bicyclists to pass each other.

DESIGN:

- Buffers should be 2-3' wide.
- Buffer lane should be marked with 2 solid white lines with diagonal hatching.
- A wide (6-8 inch) solid white line may be used to mark the side of the buffer adjacent to the motor vehicle lane.
- Recommended bike lane width is 6', but 4-5' wide lanes may be acceptable where buffers are used because the shy distance function is assumed by the buffer. The combined width of the buffer(s) and bike lane should be considered the "bike lane width."
- The buffer markings should transition to conventional dashed lines at intersection approaches without right turn only lanes where vehicles will have to cross the buffer.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Buffer striping may require additional maintenance.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

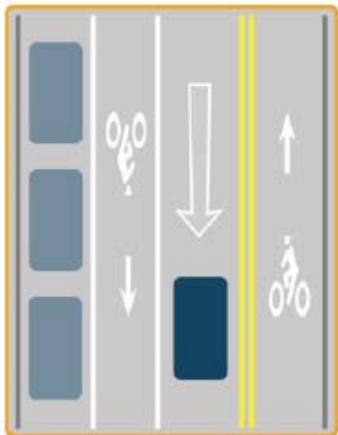
- Spruce and Pine Streets

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.4****CONTRA-FLOW BIKE LANES**

Contra-flow bike lanes are used on one-way streets to serve bicyclists traveling in the opposite direction of motor vehicles. Bicyclists traveling in the same direction as motor vehicles may share the road, or be provided a bike lane on the other side of the street.



Philadelphia Pedestrian & Bicycle Plan



Potential Signage (NACTO, Modified MUTCD R6-1, R6-2)

APPLICATION:

- Contra-flow bike lanes should be considered on roadways where bikes are currently riding on the sidewalk or in the wrong direction.
- Contra-flow bike lanes should be considered on corridors where alternate routes would require excessive out-of-direction travel or include unsafe streets for bicycles.
- Most appropriate on streets with low speeds and volumes and low parking turnover to minimize the risk of severe crashes.
- Can be used where two-way connections between bicycle facilities are needed.

CONSIDERATIONS:

- Contra-flow bike lanes can allow bicyclists to use safer streets with lower traffic volumes. They can also reduce the length of bicycle routes and out-of-direction travel by creating more direction connections for bicyclists.
- Contra-flow bike lanes may create new challenges and conflict points, as motorists may not expect on-coming bicyclists.

DESIGN:

- A "One Way" sign with "Except Bikes" should be used to inform motorists to expect two-way bike traffic.
- At signalized intersections, bike signals should be installed and oriented towards bicyclists using the contra-flow lane.
- A solid double yellow lane marking should be used to separate opposing motor vehicle travel lanes from the contra-flow bicycle lane.
- Contra-flow bike lane markings should be extended across intersections to alert cross street traffic.

- Additional design considerations are needed on streets with on-street parking (4.6.1) on both sides.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

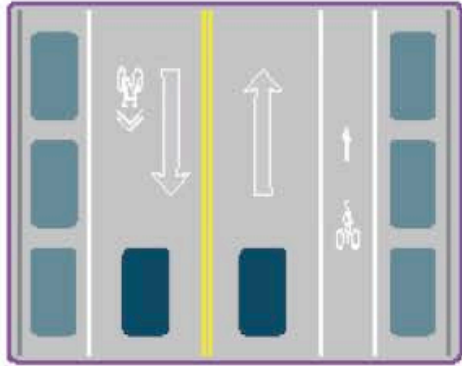
- 30th Street, Civic Center Boulevard (planned)

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.5****CLIMBING BIKE LANES**

Climbing bike lanes are provided in the uphill direction on roadways with steep slopes to accommodate slow moving bicyclists. A marked shared lane may be provided in the downhill direction.



Philadelphia Pedestrian & Bicycle Plan



Uphill bike lane and downhill sharrows in Seattle, WA.

APPLICATION:

- Climbing bike lanes should be considered on two-way streets with steep slopes and insufficient width to permit bike lanes in both directions. A climbing bike lane may be used for the uphill direction and a shared lane (with shared lane markings) for the downhill direction.

CONSIDERATIONS:

- Climbing bike lanes accommodate slower moving bicycles on uphill sections of roadway and separate them from faster moving motor vehicle traffic.
- Sharrows may be appropriate in the downhill direction because the speed differential between bicycles and vehicles is lower. Debris also tends to collect at the edge of downhill lanes, which can create a hazard for cyclists confined to a bike lane.

DESIGN:

- Design guidelines for conventional bike lanes apply.
- 5' minimum width is recommended for climbing bike lanes.

GREEN STREET OPPORTUNITIES:

- Green infrastructure (stormwater management 4.8.4) features that can be incorporated into design.

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

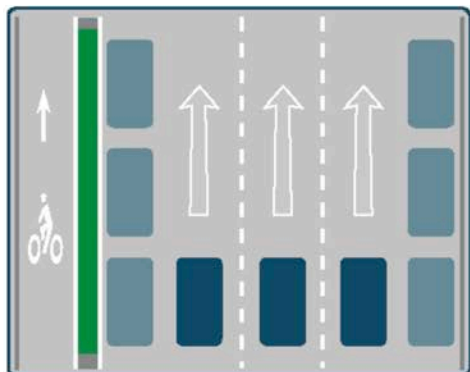
- Midvale Ave (recommended)

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.6****CYCLE TRACKS**

Cycle tracks are exclusive bike facilities separated from motor traffic and distinct from the sidewalk. Cycle tracks may be one-way or two-way and at street level, sidewalk level, or in between. They combine the user experience of a separated path with the on-street infrastructure of a conventional bike lane.



Philadelphia Pedestrian & Bicycle Plan.



Cycle tracks may be separated from adjacent travel lanes using parking lanes, raised pavement, planters, or other treatments.

APPLICATION:

- Cycle tracks should be considered on roadways with high bicycle volumes and high motor vehicle volumes and/or speeds.

CONSIDERATIONS:

- Cycle tracks provide a high level of comfort for cyclists by mitigating the risk of 'dooring' or collisions with over-taking vehicles.
- Cycle tracks may be difficult to implement due to the greater amount of space they require compared to conventional bike lanes.

DESIGN:

- Minimum recommended width is 6' for one-way cycle tracks, 12' for two-way cycle tracks. An additional 2-3' buffer is recommended between the cycle track and adjacent travel or parking lanes.
- Cycle tracks can be built on the same grade as the street by using striped buffers in combination with on-street parking (4.6.1) and/or bollards to define the bicycle space.
- Cycle tracks may also be constructed at the elevation of the top of the curb between the curb and sidewalk (or at an intermediate height between the roadway and sidewalk level).
- Adequate sight distance should be provided at intersections, which may require removal of parking spaces near intersections of bicycle signals (4.9.9).
- Care must be paid to ensure that cycle tracks do not complicate drainage, maintenance, deliveries or emergency services.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.
- Use planters (4.4.8) or stormwater planters (4.4.9) to buffer the cycle track from adjacent travel lanes.

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Street sweeping may have to be done more frequently than on streets, because of the lack of the sweeping effect of motor traffic.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

- JFK Boulevard, Market Street (recommended)

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.7****SHARED-USE PATH**

Shared-use paths within the right-of-way support multiple uses, such as walking, biking, and in-line skating. They are typically asphalt, concrete, or firmly packed crushed aggregate. Shared-use paths are separated from motor vehicle traffic by a barrier or open space. Design guidelines for shared use paths located outside the public right-of-way are not addressed in this Handbook.

APPLICATION:

- A shared use sidepath, adjacent to the roadway, may substitute for sidewalks on Park Roads (3.6) and Scenic Drives (3.7).

CONSIDERATIONS:

- Shared-use paths accommodate inexperienced cyclists or those that don't feel comfortable riding on the street.
- Shared-use paths require a significant amount of land and have several restrictive design requirements.
- In some situations, existing sidewalks can be converted to shared-use sidepaths if enough width is available to accommodate the expected level of use by both pedestrians and bicyclists.

DESIGN:

- Shared-use paths should be designed to accommodate both pedestrians and bicyclists. They should be accessible for people with disabilities.
- Where heavy use by both pedestrians and bicyclists is expected, separate paths should be planned.
- Signs should be provided at all shared-use path entrances with information on the intended trail users and the path's route. Signs can also mitigate conflicts between multiple user groups by indicating who has the right of way.
- Shared-use paths should be at least 10' wide. Paths intended for limited use may be 8' wide. 2' wide graded areas should be provided on either side of the path.
- Paths should provide frequent connections to the street network, but also have few street or driveway crossings.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Maintenance depends on the surface material of the path. Shared-use paths require inspection, sweeping and repairs.

EXAMPLES:

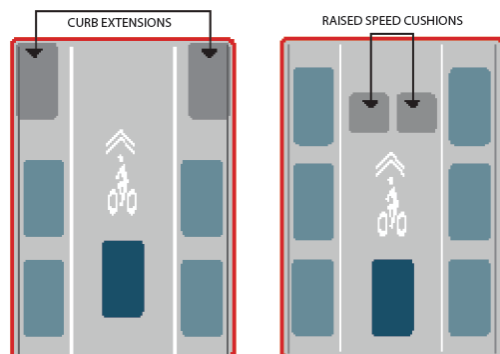
- Port Richmond Greenway (planned)

RESOURCES:

- AASHTO Chapter 14 Shared Use Path Design

**TREATMENT 4.5.8****BICYCLE-FRIENDLY STREETS**

Bicycle-Friendly streets are modified to discourage high-speed motor vehicle traffic and accommodate bicycle traffic without using separate space for bicyclists (e.g., bike lanes). Bike-friendly traffic calming techniques can be used to lower traffic speeds and improve safety for bicyclists.



Philadelphia Pedestrian & Bicycle Plan



Bicycle-friendly streets should incorporate curb extensions, green infrastructure, and other traffic calming features to create a comfortable walking/bicycling environment.

APPLICATION:

- Primarily residential streets with low motor vehicle speeds and volumes.
- Recommended for narrow streets, particularly with only one traffic lane and parking on both sides.
- Typically implemented within a larger community process that considers neighborhood traffic management and parking impacts.

CONSIDERATIONS:

- Bicycle-friendly streets increase comfort for young, elderly, and “interested but concerned” bicyclists that may not otherwise bike for transportation.
- Existing low traffic neighborhood streets can be improved to provide low cost, high quality pedestrian/bicycle connections between residential areas, parks, and other destinations.
- Should be planned as a network of routes within the City.
- May use routes that are not available to vehicles (e.g., “do not enter except bicycles” access points, trails through parks, pedestrian or bicycle bridges).
- Offset intersections require innovative design solutions.

DESIGN:

- Incorporate wayfinding signage (and shared lane markings to identify bicycle friendly street routes.
- Use traffic calming to make corridors more attractive for bicycling and less attractive to fast or high volume motor vehicle traffic:
 - Curb extensions at intersections (4.9.4)
 - Raised speed reducers (4.7.2)
 - Neighborhood traffic circles (4.9.14)
 - Raised crosswalks (4.9.11)

- Prioritize bicycle movement on bicycle-friendly streets stop controlling cross traffic at minor street crossings and providing safe convenient crossings at major street intersections.
- Center line stripes (if present) should be removed to make it easier for vehicles to pass bicyclists, except at intersection approaches that have a stop line or traffic circle.

GREEN STREET OPPORTUNITIES:

- Incorporate stormwater curb extensions (4.9.4).

ROLES & RESPONSIBILITIES:

- Should be in good condition, with a smooth riding surface.
- Streets department is responsible for street sweeping and general maintenance.
- Signs and pavement markings will need periodic replacement due to wear.

EXAMPLES:

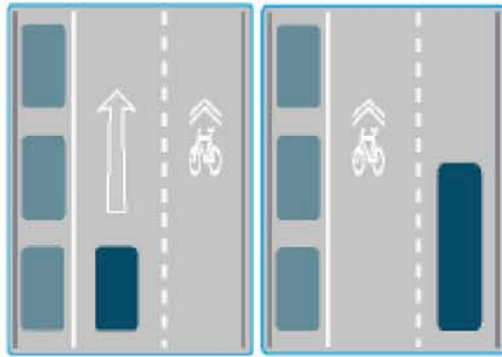
- Carpenter Lane, 15th Street (recommended)

RESOURCES:

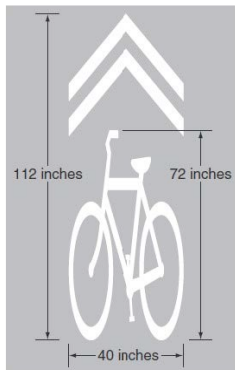
- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.9****MARKED SHARED LANES**

Marked shared lanes may be used to designate a bicycle facility on a street without sufficient width for bike lanes. Shared lane markings ("sharrows") are used to indicate the appropriate location for bicyclists to ride and alert motorists to the location of bicyclists.



Philadelphia Pedestrian & Bicycle Plan



Sharrows (MUTCD 9C-9)

APPLICATION:

- Shared lane markings are never appropriate on streets with speed limits greater than 35 mph.
- Marked shared lanes are most appropriate for lower volume, lower speed streets that are compatible with bicycling without geometric changes.

CONSIDERATIONS:

- Marked shared lanes alert motor vehicles to the presence of bicyclists and their position in the street.
- Sharrows can help bicyclists position themselves safely in lanes too narrow for a motor vehicle and bicycle to ride side by side.
- Sharrows can help identify bicycle networks and connections between bicycle facilities.
- Shared Lane Markings require no additional street width.

DESIGNS:

- Shared lanes do not require wider lane widths.
- Signs should be used to alert bicyclists and motorists if bike lanes transition to Marked Shared Lanes.
- The Shared Lane Marking in use in the U.S. is the "sharrow," illustrated in MUTCD 9C-9.
- Shared Lane Markings should not be used on shoulders or in designated bicycle lanes.
- Sharrows should be placed based on the difficulty bicyclists experience in following the proper travel path. On busier streets, sharrows may be placed every 50 to 100', while on low traffic bicycle routes they may be placed up to 250' or more.
- Shared lane markings must be positioned 4' minimum from curb or the edge of the parking lane if on-street parking (4.6.1) is present (See MUTCD Section 9C.07)

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Shared lane markings should be maintained to ensure their visibility.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

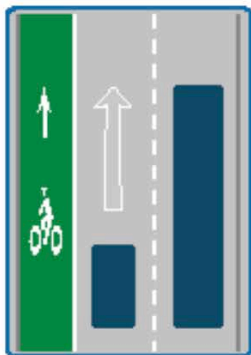
- Umbria, Main St and Ridge Avenue between Manayunk and the Wissahickon

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide

**TREATMENT 4.5.10****GREEN COLORED PAVEMENT**

Green colored pavement can be used to identify potential bicycle/vehicle conflict areas, increase the visibility of conflict areas, and reinforce priority to bicyclists. Conflict points are locations where motorists and cyclists must cross each other's path (e.g., at intersections or merge areas).



Philadelphia Pedestrian & Bicycle Plan

APPLICATION:

- Colored pavement is commonly used at intersections, driveways, and conflict areas where motorists and cyclists must cross each other's path (e.g., at intersections or merge areas).
- Colored pavement may be considered in areas where parking/stopping in the bike lane may be an issue.

CONSIDERATIONS:

- Colored paint increases the visibility of bicyclists and promotes the multi-modal nature of a corridor.
- Colored paint can alert motorists and bicyclists to potential areas of conflict.
- May increase motorist yielding behavior.

DESIGN:

- The color green is required by the MUTCD for bicycle facilities to minimize confusion with other traffic control markings.
- Standard white bike lane lines should be provided along the edges of the colored lane.
- The pavement should be skid resistant and retro-reflective.
- A "Yield to Bikes" sign (modified MUTCD R10-15) should be used at intersections or driveways where bicyclists have the right of way.
- Colored pavement typically extends through the entire bicycle/vehicle conflict zone (e.g., through the entire intersection or through the transition zone where motorists cross a bike lane to enter a dedicated right turn lane).

ROLES & RESPONSIBILITIES:

- Should be kept free of potholes, broken glass, and other debris, like all conventional bike lanes.
- Colored pavement may require additional maintenance based on the material.
- Streets department is responsible for street sweeping and general maintenance.

EXAMPLES:

- Transition zones on Benjamin Franklin Parkway near 20th

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide



Colored pavement can increase the visibility of bike lanes in areas where parking/stopping in the bike lane is an issue.

**TREATMENT 4.5.11****BIKE ROUTE SIGNS**

Bike route signs guide bicyclists along preferred bicycle routes and usually provide distances and directions to common destinations. They are typically placed at decision points along bicycle routes, such as at the intersection of multiple bikeways.



Philadelphia Pedestrian & Bicycle Plan



Bicycle wayfinding signs at 13th and Pine show the direction and distance to important destinations.

APPLICATION:

- Bike route signs should be considered on streets and bicycle facilities that are part of the bicycle network.
- Bike route signs can direct users to a variety of destinations, including bikeways, commercial centers, public transit centers and stations, parks, hospitals, community destinations, and bridges.

Considerations:

- Bike route signs help familiarize users with the bicycle network and identify the best bicycle routes to destinations.
- Bike route signs indicate to motorists that they are driving along a bike route.

DESIGN:

- Bike route signs should follow MUTCD standards for mounting height and lateral placement.
- MUTCD requires bike wayfinding signs to use a green background.
- Decision signs should be placed in advance of all turns or decision points.
- Confirmation signs should be placed every ¼ to ½ mile along off-street bicycle routes or every 2 to 3 blocks along on-street routes.
- MUTCD Section 9B provides bike sign design standards, including lettering size (generally 2.25-4.5 inches).

ROLES & RESPONSIBILITIES:

- Maintenance for bike route signs is similar to other signs. They may need to be replaced periodically due to wear.
- Streets Department is responsible for street maintaining and replacing street signs.

EXAMPLES:

- 13th and Pine

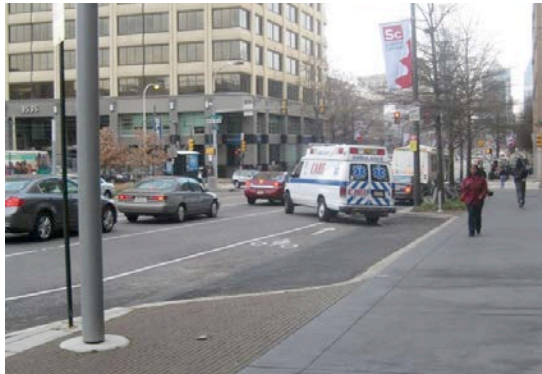
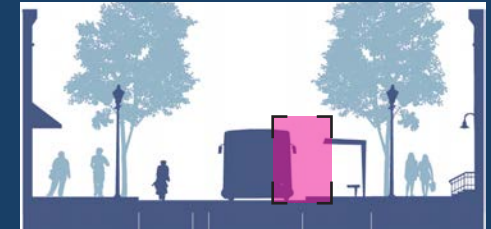
RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide
- MUTCD Chapter 9



4.6 CURBSIDE MANAGEMENT COMPONENT

The Curbside Management Component addresses facilities between the cartway and the sidewalk, including: transit stops, on-street parking, loading zones, lay-bys, and alternative uses of the curb lane. Related items: driveways (4.8 Urban Design Component), curb extensions (4.9 Intersection Component).



Lay-by lanes should be used rarely because they allow vehicles to encroach into the sidewalk area and decrease comfort and safety for pedestrians.



Loading zones should be located, designed, and enforced to limit interference with pedestrian and bicycle traffic. (30th Street Contraflow lane - Philadelphia Bicycle Coalition)

FUNDAMENTALS:

- Curbside management should limit conflicts between modes and provide a buffer between traffic and pedestrians.
- Design transit stops (4.6.5) to increase the comfort and attractiveness of transit. Transit stops should be well connected to the pedestrian network and surrounding destinations.
- Explore alternative uses of underutilized parking lanes (4.6.6) for transit stops, bicycle parking (4.4.3), streetscaping, stormwater management features (4.8.4), and pedestrian amenities such as parklets.
- Locate and design loading zones to limit interference with pedestrian and bicycle traffic wherever possible.
- Limit lay-by lanes (4.6.3) and other vehicle incursions onto the sidewalk.

POLICY:

- The Philadelphia Code Title 12-900 establishes standards and regulations for parking and loading facilities in the public right-of-way.
- SEPTA's Bus Stop Design Standards (under development) include standards for bus stop locations, geometry, and amenities.
- As part of the Transit First pilot program, the City and SEPTA are partnering to improve transit service reliability and travel time using route, stop location, and design improvements.

ROLES & RESPONSIBILITIES:

- The Streets Department Transportation Engineering and Planning Services unit reviews and approves lay-by lanes (4.6.3).
- Streets Department Traffic Engineering Division sets curbside rules.
- The Philadelphia Parking Authority regulates the use of on-street parking (4.6.1) and permits loading zones (4.6.4).
- City Planning Commission reviews Streets bills for lay-by lanes.
- SEPTA operates transit service and maintains signs at all transit stops (4.6.5).
 - Adjacent property owners are responsible for shoveling and maintaining sidewalks at transit stops.

CONTACTS:

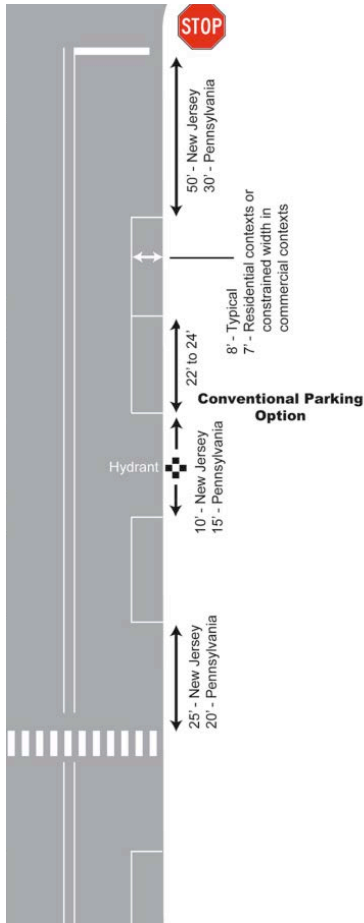
- Streets Department
- Philadelphia Parking Authority
<http://philapark.org/contact-ppa/>
- SEPTA, Chief Officer Service Planning
cwebb@septa.org or 215-580-7974.
- City Planning Commission
Right of Way Planner
www.philaplanning.org

OTHER RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- PennDOT Smart Transportation Guidebook

**TREATMENT 4.6.1****ON-STREET PARKING**

On-street parking serves an important need for motor vehicles. Parking lanes can also help to make streets more comfortable for pedestrians and bicyclists by providing a buffer from traffic and calming traffic (reducing vehicle speeds) by narrowing the perceived width of the roadway.



Typical on-street parking design (Smart Transportation Guidebook)

APPLICATION:

- Appropriate on all street types except Shared Narrow Streets (3.10), provided that desired operating speeds are 35 mph or lower.
- Back-in angled parking should be considered on wide streets in commercial areas with lower volumes and speeds (can provide more parking spaces than parallel parking).

CONSIDERATIONS:

- Balance access and traffic calming benefits of parking lanes with negative impacts such as increased pedestrian crossing distance and decreased right-of-way available for sidewalks, bicycle facilities (4.5), and green infrastructure.

DESIGN:

- See Philadelphia Code Title 12-900 for standards and regulations for parking and loading facilities in the public right-of-way.
- The desired parking lane width in Philadelphia is 8' (minimum is 7'). This width should be assumed on all residential streets and is acceptable on commercial streets with lower traffic volumes and parking turnover.
- Recommended parallel parking space dimensions are 7-8' wide and 19-20' long, designated by 4" white lines.
- At least 1.5' should be kept clear between the curb and any trees, poles, or other objects on the sidewalk, to allow for opening and closing car doors.
- Back-in angled parking spaces are typically 8.5' wide. (see Smart Transportation Guidebook)

GREEN STREET OPPORTUNITIES:

- Incorporate pervious pavement and/or stormwater bumpouts (4.9.4).

ROLES & RESPONSIBILITIES:

- The Philadelphia Parking Authority regulates on-street parking and loading zones and installs and maintains parking meters and parking signs.
- Streets Department determines where parking, bus, and taxi zones are allowed.
- Streets Department installs and maintains striping for on-street parking.
- City Council establishes parking regulations.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- Smart Transportation Guidebook

PEAK HOUR RESTRICTED PARKING

In peak hour restricted parking areas, on-street parking is allowed during off-peak hours and restricted during peak hours to provide an additional travel lane. Peak hour restricted parking is an important tool for managing congestion and for providing on-street parking in some areas, but requires extensive enforcement to effectively improve traffic operations. Peak hour restricted parking is generally discouraged in complete streets applications, because curb extensions cannot be used in areas with peak hour clearances. Removing parking during peak hours can also encourage higher vehicle speeds, make it difficult to access parking for nearby destinations during peak hours, and increase pedestrian crossing distances during highest traffic volumes.

In April 2010, the Chicago Department of Transportation began lifting rush hour parking restrictions on 225 of the busiest blocks in Chicago to enable streetscape additions such as curb extensions (4.9.4), as well as bicycle and pedestrian improvements.



**TREATMENT 4.6.2****IN-STREET BICYCLE PARKING**

In-street bike parking can be provided in the parking lane in areas where there is not enough room to fit a car, for example, in between driveways. On-street vehicle parking spaces may also be converted to provide in-street bicycle parking. One standard 20' vehicle parking space can provide parking for up to 12 bicycles on 6 standard U-racks. In-street bike parking also has the benefit of not intruding onto adjacent sidewalks.



In-street bike parking can be combined with curb extensions to provide a more protected area for bicycles and to accommodate planters or bioswales. (Bikeportland)



Philadelphia's first in-street "bike corral" was installed on Sydenham Street (off 1500 block of Walnut St.) in September 2011.

APPLICATION:

- High Volume Pedestrian Streets (3.1), Civic/ Ceremonial Streets (3.2), Walkable Commercial Corridors (3.3), City Neighborhood Streets (3.8).
- Common in walkable/bikeable commercial areas.
- Cannot be used on streets with restricted peak hour parking.

CONSIDERATIONS:

- Can be combined with curb extensions (4.9.4) to provide additional protection from errant vehicles and provide space for green infrastructure.
- Help to reduce bicycle clutter on busy sidewalks.
- Locations frequently determined by requests from surrounding businesses.
- Standard U-racks or decorative racks can be used.

DESIGN:

- Bike racks should be placed so that parked bikes are perpendicular to the curb line.
- Should be protected from vehicles by a curb, bollards, or other barrier at the edge of the parking lane. Where possible, racks can be placed on a curb extension (4.9.4).
- If located on a curb extension or above grade, best practice is to provide a curb ramp to allow cyclists to wheel their bicycle from the travel lane into the parking area.

GREEN STREET OPPORTUNITIES:

- Use stormwater bumpouts (4.9.4) to buffer and protect in-street bicycle parking.

ROLES & RESPONSIBILITIES:

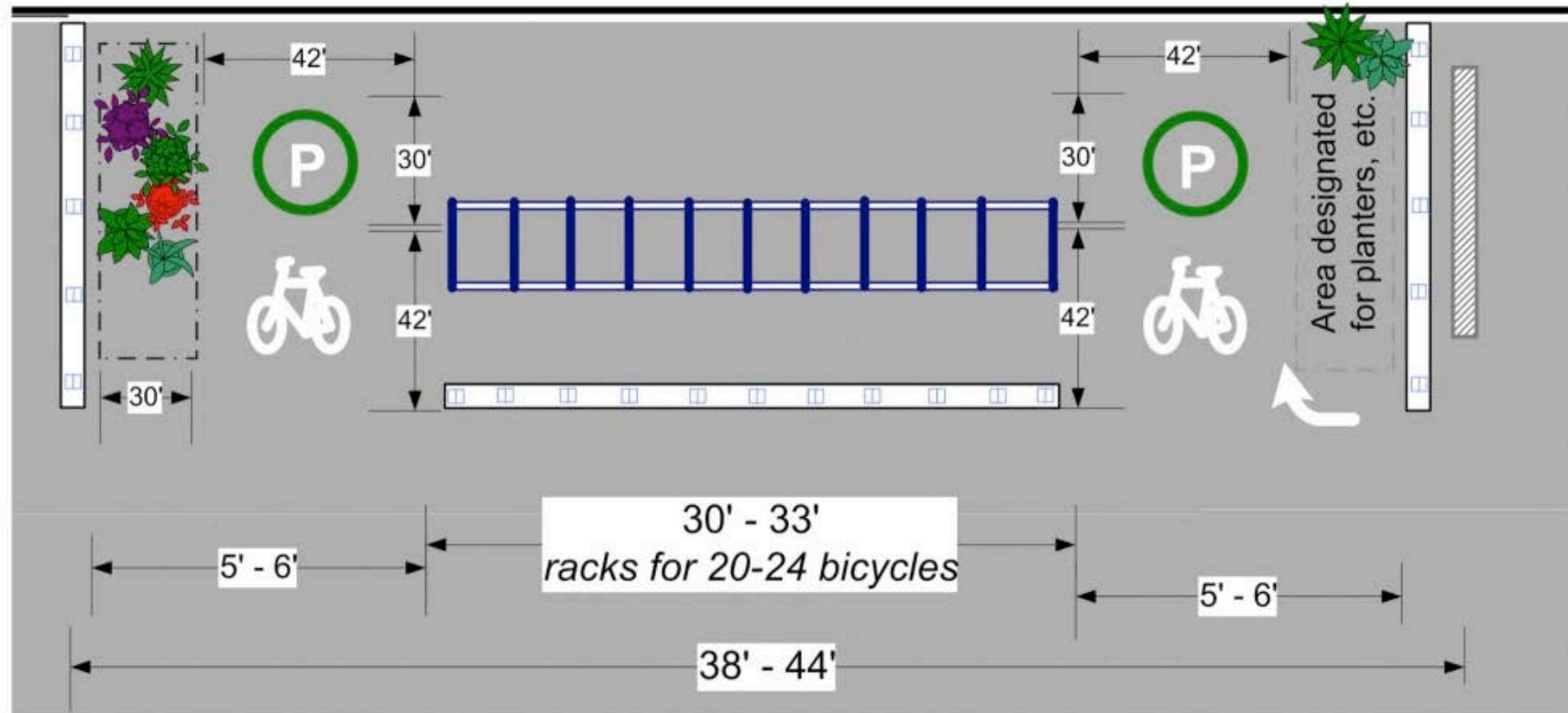
- Streets Dept will permit if local maintenance agreement is signed with adjacent property owner or another maintenance partner.
- Area cannot be reached by street sweepers or snow plows, so some additional maintenance is necessary.

EXAMPLES:

- Sydenham and Walnut

RESOURCES:

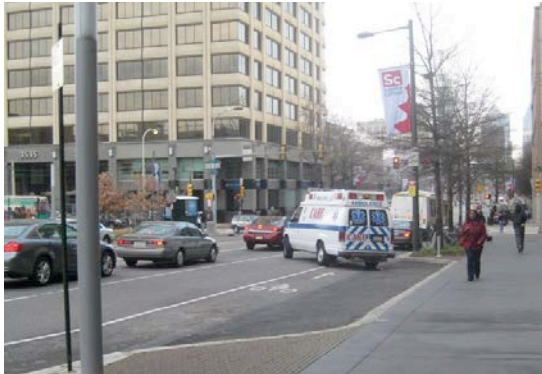
- Philadelphia Pedestrian & Bicycle Plan



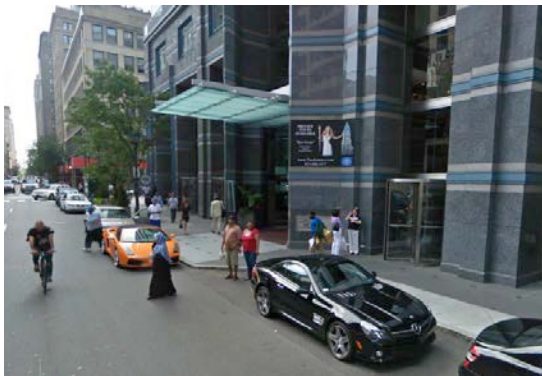
*Typical downtown in-street bicycle parking design
(Portland Bureau of Transportation)*

**TREATMENT 4.6.3****LAY-BY LANES**

Lay-by lanes are typically allowed for hotels and hospitals if there is not an adjacent parking lane that can be converted to a loading zone. Lay-by lanes are discouraged, particularly in high pedestrian traffic areas, because they encroach on sidewalk space, eliminate the Furnishing Zone, and decrease the comfort and quality of the pedestrian environment.



Lay-by lanes are generally discouraged because they allow vehicles to encroach into the sidewalk area and decrease comfort and safety for pedestrians (KAI).

**APPLICATION:**

- Discouraged in most instances because of loss of pedestrian space, but if there is not an adjacent parking lane that can be converted to loading, lay-bys are allowed for hospitals and often for hotels.

CONSIDERATIONS:

- Protect safety and comfort of sidewalk, especially on major pedestrian streets.
- Loading zones (4.6.4) should be used instead of lay-by lanes whenever possible.
- Lay-by lanes should be reserved for uses that have an urgent need for loading space at the entrance, such as hospitals and hotels.
- Lay-by lanes should not be permitted for residences or in high pedestrian traffic areas.

DESIGN:

- Where permitted, lanes should preserve the recommended minimum walking zone width for the Street Type (see 4.3.2), plus several additional feet to accommodate the car door and the anticipated loading activity.
- Where new buildings are constructed and a lay-by lane is desired, the full width of the existing sidewalk should be maintained adjacent to the lay-by; that is, the building should be set back at the ground floor level.
- Where a lay-by is permitted adjacent to a parking/loading lane, because of peak hour clearance, the maximum intrusion into the sidewalk should be 3'. This will prevent vehicles from double parking during off-peak hours.

ROLES & RESPONSIBILITIES:

- The Streets Department Transportation Engineering and Planning Services unit permits and approves lay-by lanes.
- Lay-by lanes are constructed and maintained by the developer or property owner.

EXAMPLES:

- 16th Street North of Chestnut (Liberty 2)
- 1400 Arch
- Pennsylvania Hospital Entrance on Spruce Street

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan

**TREATMENT 4.6.4****LOADING ZONES**

Loading zones are curbside areas designated for the loading and unloading of materials and passengers. Loading zones are typically located in a parking lane. Unlike lay-by lanes, loading zones do not encroach into the sidewalk, but wide trucks may intrude into adjacent sidewalks, bike facilities, or travel lanes when loading/unloading.



Passenger loading zone/parking sign near 34th St on Walnut (KAI).



Loading zones should be located, designed, and enforced to limit interference with pedestrian and bicycle traffic. (KAI - 36th Street and Market).

APPLICATION:

- Appropriate on many street types provided that desired operating speeds are 35 mph or lower.
- Generally not appropriate on Lower Density Residential Streets (3.9), Park Roads (3.6), Scenic Drives (3.7), Shared Narrow Streets (3.10) or Local Streets (3.11) in residential neighborhoods.

CONSIDERATIONS:

- Businesses can apply to the Philadelphia Parking Authority to have Loading Zones established outside of their locations.
- Loading zones should be located, designed, and enforced to limit interference with pedestrian and bicycle traffic.

DESIGN:

- See Philadelphia Code Title 12-900 for standards and regulations for parking and loading facilities in the public right-of-way.
- According to the vehicle code, all vehicles shall be parked parallel to the edge of the roadway, headed in the direction of traffic, with the wheels placed approximately six inches from the curb.
- Vehicles shall be permitted to remain in a Loading Only zone for a period of 30 minutes and in a Passenger Loading Only zone for a period of 20 minutes.
- To preserve visibility around large vehicles, loading zones should not be located at intersections.

ROLES & RESPONSIBILITIES:

- The Philadelphia Parking Authority regulates the use of on-street parking (4.6.1) and permits loading zones. Permits are valid for one year.

EXAMPLES:

- Common throughout the City

RESOURCES:

- Philadelphia Parking Authority
- <http://philapark.org/permit-information/loading-zone-permits/>

**TREATMENT 4.6.5****TRANSIT STOPS & SHELTERS**

Well-designed transit stops enhance the pedestrian environment and increase the comfort and convenience of taking transit. These stops are well-connected to the surrounding pedestrian and bicycle network and provide convenient connections to residences, jobs, and other destinations. They are designed to be accessible for individuals with disabilities boarding and alighting buses and provide amenities such as benches, shelters, and streetscaping.



Curb extensions can be used to separate transit stops from the sidewalk clear zone. (18th and JFK)



As part of the Green City, Clean Waters plan, the Philadelphia Water Department is piloting a bus shelter green roof at a bus stop near City Hall. (KAI).

APPLICATION:

- Appropriate on all street types except Shared Narrow Streets (3.10).
- Should be considered as a component of all large new development.

CONSIDERATIONS:

- Stops should be located in visible, active areas to increase security.
- Shelters and benches should be located so that they maintain minimum clear walking zone widths (see 4.3.2) and do not create pinch points.
- Transit stops can be located in curb extensions (4.9.4) to provide additional space for passenger circulation and amenities. Transit stops at curb extensions also reduce transit vehicle delay associated with merging into the adjacent traffic stream.
- Shelters and curb extensions may impact access to utilities and should be coordinated with the Committee of Highway Supervisors.
- At signalized intersections, locating transit stops at the far side of the intersection may help improve pedestrian and vehicle circulation.
- SEPTA does not prefer midblock stop locations unless serving a major destination.

DESIGN:

- For specific guidance and standards regarding SEPTA bus stop design, please refer to SEPTA's Bus Stop Design Standards (under development).
- SEPTA standard bus stop length is 60' for standard buses and 90' for articulated buses.
- SEPTA works with Streets Department to determine the size of transit stops given peak hour passenger/vehicle demand and other needs on the block.
- Provide adequate lighting (4.4.4) to allow safe

boarding and de-boarding from the vehicle and general safety to passengers waiting.

- Install signs to provide an adequate level of information, based on the type of stop.
- If a shelter is provided, the shelter must include both a bench and a clear ADA compliant waiting area (minimum 5'x8') that is suitable for a wheel chair to be positioned out of the weather.
- Benches and wheel chair waiting areas should not conflict with areas where access to signs or pamphlets would be placed.
- Place shelters in such a fashion so they do not conflict with movement of passengers who are boarding and de-boarding the vehicle with particular care for wheel chair dimensions and turning radii.
- Assure the placement of shelters does not block the critical sight lines of the bus/trolley operators.

GREEN STREET OPPORTUNITIES:

- Place stops on stormwater bumpouts (4.9.4).

ROLES & RESPONSIBILITIES:

- Transit shelters are installed and maintained by a private company through contract with the City.

EXAMPLES:

- JFK at 17th Street - stop located on a long curb extension.
- 8th Street at Walnut - far side stop instituted with the Route 47 pilot.
- Ogontz Avenue at Andrews Avenue southbound - stop is long to accommodate articulated buses and is well defined, including street markings.

RESOURCES:

- SEPTA Bus Stop Design Standards
- SEPTA Service Standards provides guidance on stop frequency

**TREATMENT 4.6.6****ALTERNATIVE USES OF THE PARKING LANE**

Parking lanes can be temporarily or permanently converted to other uses that enhance the pedestrian environment, including parklets, planters, or cafe/restaurant seating.



Parklets and cafes in the parking lane create public space and “activate” streets without encroaching on clear sidewalk space. (Source: Ryan Collerd)



Railings, curbs, or bollards should be used to protect flexible parking lane uses from errant vehicles.

APPLICATION:

- High Volume Pedestrian Streets (3.1), Civic/Ceremonial (3.2), Walkable Commercial Corridors (3.3), City Neighborhood Street (3.8).
- Common in walkable/bikeable commercial areas.
- Cannot be used on streets with restricted peak hour parking.

CONSIDERATIONS:

- Provides additional flexibility for streets with narrow sidewalks, where there is not space to accommodate planters (4.4.8), or sidewalk cafes (4.4.6) while maintaining adequate clear walking space.
- Can help to visually narrow the roadway and calm traffic landscaped.

DESIGN:

- Flexible use of the parking lane should generally utilize the full width of the parking lane and at least one full parking space.
- Cafes, planters, and other alternative parking lane uses should not extend beyond the width of the parking lane.
- Improvements in the parking lane should be protected from errant drivers by a curb, bollards, or other fixed object.
- Plantings and furnishings in the parking lane should not create conflicts with passing vehicles in the adjacent travel lane.
- Where in-street planting is designed for stormwater infiltration, the curb should include breaks to allow stormwater to enter and overflow stormwater to exit when the basin is at infiltration capacity.
- Flexible uses of the parking lane should not block bicycle lanes, transit routes and stops, or accessible parking spaces.

GREEN STREET OPPORTUNITIES:

- Green infrastructure (stormwater management 4.8.4) features that can be incorporated into design.

ROLES & RESPONSIBILITIES:

- Adjacent property owner is responsible for maintenance after obtaining approval for the installation.
- Generally requires additional parking management by the City or a local partner such as a neighborhood association.

EXAMPLES:

- Green Line Café, University District.

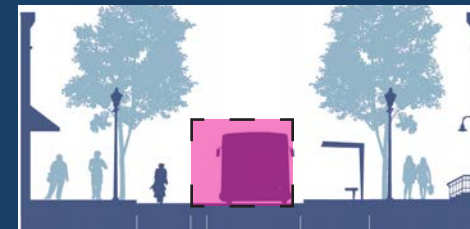
RESOURCES:

- San Francisco Better Streets Plan



4.7 VEHICLE/CARTWAY COMPONENT

The Vehicle/Cartway Component addresses the portion of the public right-of-way that is intended primarily or exclusively for motor vehicle use, including travel lanes. Intersection design treatments are addressed in the Intersections and Crossings Element. Related items: Marked Shared Lanes (4.5 Bicycle Component), Pedestrian Priority Streets (4.3 Pedestrian Component), Driveways (4.8 Urban Design Component).



Many Philadelphia streets have lanes as narrow as 9'.



Wide vehicle travel lanes create additional impervious surface and may encourage higher vehicle speeds.

FUNDAMENTALS:

- Balance vehicle mobility with the mobility and access needs of other roadway users.
- Promote speeds that are appropriate for the street type and the surrounding context using cartway and streetscape design.
- Minimize roadway width while maintaining multi-modal transportation access and amenities. Consider emergency vehicle access on all streets. Consider freight and transit access on designated routes.
- Provide multiple alternative routes to and from destinations.
- Connect and extend the street grid wherever possible when developing new roads.

POLICY:

- Subdivision street standards are established in the Philadelphia Zoning Code Section 14-708, which only covers a small portion of new development.
- Signs, striping, and other traffic control devices must be installed in accordance with current MUTCD standards.
- The Philadelphia Green Street Design Manual establishes design guidelines for green stormwater infrastructure improvements in the furnishing zone.

ROLES & RESPONSIBILITIES:

- Mayor's Office of Transportation and Utilities coordinates all improvements to the public right-of-way.
- Streets Department constructs and maintains vehicle facilities in the public right-of-way.
- Planning Commission reviews subdivision plats.
- Water Department reviews stormwater infrastructure design.

CONTACTS:

- City Planning Commission
Right of Way Planner
www.philaplaning.org
- Philadelphia Streets Department
www.phila.gov/streets/

OTHER RESOURCES:

- PennDOT Smart Transportation Guidebook
- ITE Designing Walkable Urban Thoroughfares
- Philadelphia Green Street Design Manual
- AASHTO Policy on Geometric Design of Highways and Streets

**TREATMENT 4.7.1****LANE WIDTH**

Restriping to reduce travel lane widths (e.g., from 11' to 10') can help free pavement width to accommodate pedestrian, bicycle, or transit facilities without widening the roadway or acquiring additional right-of-way. Travel lane width also influences vehicle speeds, maneuverability, and urban design. Due to the historic nature of many streets in Philadelphia, many streets throughout the City have 9' travel lanes, which contribute to creating a pedestrian friendly environment.



In some areas travel lanes may be removed or narrowed to accommodate complete street facilities.



Outside lanes may be wider to accommodate buses, trucks, and bicycles.

APPLICATION:

- Appropriate on all street types.
- Judgment should be exercised when narrowing lane width on freight, transit, or emergency service routes.

CONSIDERATIONS:

- Research done on urban and suburban arterials for the AASHTO Highway Safety Manual found that the width of travel lanes did not have an impact on the number of crashes on roadway segments.
- The 2010 Highway Capacity Manual (HCM) provides analysis of the operational impacts of narrowing travel lanes.
 - At signalized intersections, there is no operational (saturation flow) difference between lane groups with an average width of 10 to 12.9' (HCM Exhibit 18-13).
 - On multilane highway segments with speeds of 45-60 miles per hour, free flow speeds decrease by an average 1.9 and 6.6 miles per hour on 11 and 10' lanes, respectively, compared to 12' lanes (HCM Exhibit 14-8).
- The AASHTO Green Book recommends 12' lanes on high speed principal arterials; narrower lane widths are adequate and have some advantages on roads with interrupted flow and/or operating speeds less than 45 mph.
- On freight, transit, and emergency response routes, inside travel lanes may be narrowed, but 11' outside lanes may be preferred to prevent larger vehicles from encroaching upon bicycle and pedestrian facilities.
- Lane widths should be selected to balance safety, access, and comfort for all modes.
- Narrower lane widths (less than 11 feet) can be used

in urban street improvement projects to provide additional space to relieve traffic congestion or address specific accident patterns (Harwood, 1990)

DESIGN:

- Standard lane width in Philadelphia is 9-12'.
- Preferred cartway widths provide 8' parking lanes on both sides of the street and 10' travel lanes (Paving plan guidelines)
- The Philadelphia Zoning Code (Section 14) establishes minimum street widths for new subdivisions, which are a small proportion of new development.
- On SEPTA transit routes, a minimum curbside lane width of 10' is desired.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- Lane striping and pavement is maintained by Streets Department

EXAMPLES:

- Narrow travel lanes are common throughout Philadelphia

RESOURCES:

- 2010 Highway Capacity Manual
- AASHTO Highway Safety Manual



TREATMENT 4.7.2

RAISED SPEED REDUCERS

Speed reducers are raised areas of the roadway that deflect the wheels and frame of a traveling vehicle to reduce vehicle speeds. Speed humps are 10-12' long raised sections, while speed tables are longer (approx. 22') with a flat section in the middle that can accommodate raised crosswalks or large vehicle passage. Speed bumps are from 1 to 3' from front to back and are usually only appropriate for parking lots and private roads.



Signs and pavement markings should be used to warn approaching vehicles of upcoming speed humps. (streetsblog)



Speed humps are used on 34th Street south of Walnut Street to slow approaching vehicles before a midblock pedestrian crossing.

APPLICATION:

- Parks Roads (3.6), residential streets (3.9), and Walkable Commercial Corridors (3.3).

CONSIDERATIONS:

- Use with care on streets that are designated transit, freight, snow emergency routes.
- May be requested by communities and approved based on speed and engineering study.
- Raised speed reducers are not currently allowed on PennDOT facilities.

DESIGN:

- Typically 3 to 4 inches above the roadway surface.
- Speed humps are typically 13' long, speed tables are 22 to 30' long.
- Warning signs and pavement markings should be used to alert roadway users and snow plows of speed reducers.
- Speed reducers should be spaced to maintain desired operating speeds.

ROLES & RESPONSIBILITIES:

- Installed by Streets Department. Maintained by local partner in some circumstances.
- Gutters must be kept clear for proper drainage.
- SEPTA must review designs for speed humps on transit routes.

EXAMPLES:

- 34th Street south of Walnut St

RESOURCES:

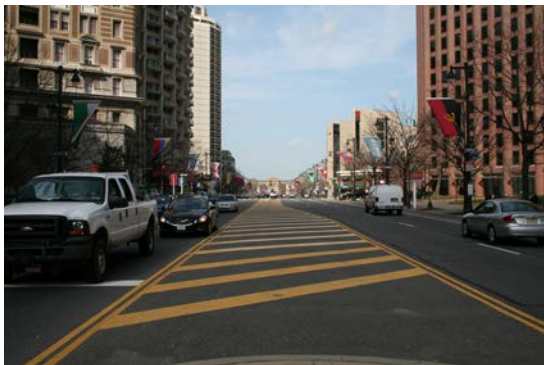
- US Traffic Calming Manual

**TREATMENT 4.7.3****MEDIANS**

Medians separate different lanes or directions of traffic within the roadway. Medians may be painted, raised concrete islands, or landscaped boulevards. Medians provide an opportunity for plantings and green infrastructure (See also pedestrian refuge islands 4.9.5).



Medians provide benefits for vehicles and pedestrians as well as an opportunity for green infrastructure (Neighbors of Overbrook Association).



Painted medians provide some traffic calming benefits, but do not provide a protected refuge for pedestrians.

APPLICATION:

- Raised medians should be considered at all pedestrian crossings where total roadway width exceeds 60' (Smart Transportation Handbook).
- Two-way multilane streets.

CONSIDERATIONS:

- Design should account for changes in traffic circulation and emergency vehicle access so that vehicles are not diverted onto inappropriate routes.
- Should be designed to discourage vehicles from encroaching onto them.
- Include permeable surfaces, planters (4.4.8), or trees (4.4.7) wherever possible to reduce encroachment, calm traffic, and provide green infrastructure.
- The height of plantings near intersections should be restricted so that sight lines are not obstructed.
- Placement should consider locations of underground utilities (4.8.2).

DESIGN:

- Treatments and widths vary based on design.
- Recommended at least 6' in width, preferably 8' if serving as pedestrian refuge.
- See pedestrian refuge island design guidance (4.9.5).

GREEN STREET OPPORTUNITIES:

- Incorporate plantings or stormwater planters (4.4.9).

ROLES & RESPONSIBILITIES:

- Developer is responsible for maintaining landscaped medians. This requires an agreement with the City.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- US Traffic Calming Manual

**TREATMENT 4.7.4****CHICANES**

Chicanes are staggered curb extensions used to narrow the roadway and create an “s”-curving roadway alignment. By making it difficult for vehicles to travel in a straight line, chicanes can calm traffic on roadway segments or midblock locations.



The Better Blocks Philadelphia project created temporary chicanes and other traffic calming features on Webster Street.



Chicanes are used for traffic calming and stormwater management, particularly near parks in Portland, OR. (streetsblog).

APPLICATION:

- Narrow, low-volume roads with a maximum of two travel lanes and a history of speeding issues.

CONSIDERATIONS:

- Include permeable surfaces or planters (4.4.8) whenever possible to reduce encroachment and provide green infrastructure.
- The height of plantings near intersections should be restricted so that sight lines are not obstructed.
- Placement should consider locations of underground utilities (4.8.2).
- May require loss of on-street parking (4.6.1). Alternatively, on-street parking may be used on alternating sides of the street to create a chicane effect.
- May impact drainage or require catch basin relocation if not designed to capture stormwater.
- Avoid on bus, freight, or emergency services routes.

DESIGN:

- See curb extensions design guidance (4.9.4)
- Warning signs and pavement markings should be used to alert roadway users and snow plows of chicanes.

GREEN STREET OPPORTUNITIES:

- Incorporate stormwater planters.
- ROLES & RESPONSIBILITIES:**
- Developer is responsible for maintaining landscaped chicanes. This requires an agreement with the City.

EXAMPLES:

- South of South Street Better Blocks Project

RESOURCES:

- US Traffic Calming Manual
-

**TREATMENT 4.7.5****BUS LANES**

Bus lanes are travel lanes dedicated for preferential or exclusive use by public transit buses. Bus lanes can improve bus speeds and service reliability by removing buses from congested mixed traffic lanes and eliminating the need to merge in and out of mixed traffic lanes when serving stops. As a result, they may help make transit a more attractive transportation option.



Bus lanes eliminate the need for buses to merge in and out of traffic and may help improve service reliability.

APPLICATION:

- Streets with priority bus service or high bus volumes and traffic congestion.

CONSIDERATIONS:

- Also serve as a route for emergency vehicles to bypass traffic.
- May result in loss of parking, if designated in curbside lane.
- Avoid on streets where roadway geometry prevents safe operation of bus lanes in conjunction with other necessary roadway uses.
- Bus lanes may be used as shared bike lanes (4.5.9) in limited situations, but are generally avoided due to safety concerns.

DESIGN:

- Delineated from other travel lanes in the roadway using markings and/or colored pavement.
- Identified with "Bus Only" pavement marking, signing, and striping (MUTCD).
- SEPTA criteria for installing bus lanes are bus volume, passenger volume, traffic volume, and delay.
- Can run along the curbside or adjacent to the parking lane. If adjacent to the parking lane, stops can be made at the curb or bus bulbs.
- Consider queue-jump lanes where buses need to merge with mixed traffic (at choke points or end of bus lane) and at priority turn locations.
- When conditions permit, consider constructing concrete bus lanes to improve longevity.
- At intersections, signing and markings should make it clear if turns from the bus lane are prohibited or if cars can enter the lane to make right turns.

GREEN STREET OPPORTUNITIES:

- Consider using pervious pavement.

ROLES & RESPONSIBILITIES:

- SEPTA and Streets Department operate and maintain bus only lanes.

EXAMPLES:

- Shared bus/bike only lane on Chestnut Street in Center City

RESOURCES:

- SEPTA Design Guidelines
- TCRP Report 118: BRT Practitioner's Guide
- TCRP Report 100: Transit Capacity and Quality of Service Manual



4.8 URBAN DESIGN COMPONENT

The Urban Design Component addresses policies related to those aspects of urban form that affect complete streets. These aspects may include but are not limited to: building setbacks; location of surface parking with respect to lot layout; driveways; and encouraging active street-facing uses. Related items: architectural features (4.4 Building & Furnishing Component), on-street parking (4.6 Curbside Management Component).



Active street uses add interest to a street, encourage walking and bicycling, and may increase safety through additional “eyes on the street”.



Street level building setbacks can be adjusted to create pedestrian plazas, which provide an amenity for pedestrians and businesses

FUNDAMENTALS:

- Activate streets by encouraging windows, store-fronts, and other active uses facing the street, rather than blank walls or parking lots.
- Use pedestrian scale design elements (e.g., lighting, setbacks) to increase pedestrian safety and comfort and encourage walking and bicycling.
- Manage access on streets to reduce pedestrian/bicycle conflicts with vehicles at driveways and intersections.
- Building entrances/exits and pedestrian paths should be oriented to direct pedestrians to controlled intersection crossings.

POLICY:

- The Philadelphia Zoning Code Chapter 14 establishes standards for urban form and design for all areas of the City.

ROLES & RESPONSIBILITIES:

- City Planning Commission Urban Design Division is responsible for guiding the design and visualization of public policies developed by the City Planning Commission. The goal of the Division is to maintain and enhance the livability, human scale, and cultural treasures of Philadelphia.
- Zoning Code Commission recommends amendments to the Philadelphia Zoning Code to make the Code consistent and easy to understand, and to enhance and improve Philadelphia’s city planning process while encouraging development and protecting the character of Philadelphia’s neighborhoods.
- Zoning Board of Adjustments must hear all variance requests. Very few administrative adjustments are allowed.

CONTACTS:

- City Planning Commission Urban Design Division: www.philaplanning.org
- Zoning Code Commission: <http://zoningmatters.org/commission>

OTHER RESOURCES:

- Philadelphia Zoning Code: <http://zoningmatters.org/phila/resources>
- Public Right of Way Access Guidelines
- <http://www.access-board.gov/prowac/>

**TREATMENT 4.8.1****DRIVEWAYS**

The width, spacing, number, and location of driveways impacts urban design and safety for all roadway users. The Planning Commission has developed guidelines for residential driveways and garages that balance the interests of new development and existing communities. These guidelines seek to safeguard existing neighborhood character, sidewalk safety and maintain on-street parking resources.



Many streets and homes in Philadelphia were not designed to accommodate driveways. Curb cuts can actually reduce overall parking capacity by eliminating on-street parking spaces. (PPC Rowhouse Manual).



Driveways onto major streets should be limited, particularly in high pedestrian traffic areas, due to conflicts created with pedestrians and vehicles.

APPLICATION:

- Code limits or prohibits driveways on certain pedestrian streets in Center City and on Kelly Drive.

CONSIDERATIONS:

- Driveways should be limited on streets with significant pedestrian and vehicular traffic, in order to minimize the potential for conflicts and collisions.
- In residential areas, curb cuts to create driveways make the parking supply less efficient and can even reduce overall parking capacity by eliminating on-street parking spaces.
- The Philadelphia Pedestrian and Bicycle Plan recommends limiting the number of driveways to no more than two driveways for every 200' of lot frontage per property.
- Parking facility access to these streets: Chestnut, Walnut, Locust, Spruce east of Broad, Broad, Market, and the Parkway, is limited under the zoning code and should be provided from the side or rear, preferably through service streets.
- In residential areas, permeable paving can be used for driveways, or a center green vegetative strip can reduce the impervious surface. (Best Practice: Boston, MA)
- When driveways are placed on streets with curb parking, leftover spaces of less than 15' long may be created that are too short to park a car at the curb. These spaces can be combined with the furnishing zone and greened with planters (4.4.8), vegetation strips, or tree wells (4.4.7).

DESIGN:

- More than one driveway per 100' is discouraged.
- Driveways should be at least 20' from unsignalized intersections or crosswalks and 40' from signalized intersections.
- Commercial properties may have only one driveway within 100' of an intersection, which must be as far as practicable from the intersection.
- City policy is to locate driveways on service streets to the extent possible rather than on important traffic or pedestrian streets.
- PCPC policy: Parking pads or garages should be placed at rear of houses unless parcel is not deep enough or front parking is the predominant existing pattern in the adjacent neighborhood and on the specific block.
- Driveways that cross the sidewalk must be at the same level as the sidewalk. The driveway material must change at the building line to demarcate the transition to the sidewalk.
- Sidewalks should be visually continuous across driveways to indicate pedestrians have the right-of-way.
- All driveways must meet accessibility requirements. Curb returns for driveways are prohibited because they create tripping hazards.
- Driveways should be at least 18' deep past the right-of-way line, so that vehicles do not encroach onto the sidewalk.
- Curb cuts must be located a minimum of 8' from any right-of-way intersection.
- Minimum 6' separation between adjacent driveway aprons, 10' preferred (paving plan guidelines)
- Driveways for single-family residences should not exceed 12' in width. Two-way driveways should not be wider than 24', and non-single-family one-way driveways should not be wider than 14'.
 - Exemptions may be permitted for driveways to loading bays where the cartway is less than 40' wide, or where the applicant shows that the

design vehicle needs additional space for the required movements.

- Curb cut widths for driveways serving off-street parking areas:
 - Single Garage – 10 feet
 - Double or Two Garages – 18-20 feet
 - Service Drive One Way – 12 feet
 - Service Drive Two Way – 20 feet
- Garages and curb cuts should be mirrored/paired to lessen the impact on the street and preserve on-street parking.
- Signs, mirrors, flashing lights, or other warning signals may be needed at garage exits where they cross the sidewalk. It should always be clear that vehicles must yield to pedestrians on the sidewalk. Stop signs should be used where sight distance is restricted.

GREEN STREET OPPORTUNITIES:

- Incorporate pervious pavement.

ROLES & RESPONSIBILITIES:

- Adjacent property owners are responsible for maintenance of driveways.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- Philadelphia City Planning Commission Guidelines for Residential Driveways and Garages



**TREATMENT 4.8.2****UTILITIES**

Gas, water, electric, and other utilities are necessary services with transmission lines that are concentrated within the public right-of-way. Both overhead and underground utility placement must be considered when planning, designing, and constructing street improvement projects.

APPLICATION:

- Appropriate on all street types.

CONSIDERATIONS:

- Curb extensions and stormwater bumpouts (4.9.4) may make accessing underground utilities more difficult and expensive. Curb extensions areas may need to be surfaced or replanted after utility work is completed.
- Street trees, lighting, and other furnishings should be selected and placed to accommodate any overhead utilities.

DESIGN:

- All street improvements that require opening the street must be reviewed and approved by the Committee of Highway Supervisors, which includes representatives from the utility companies.

ROLES & RESPONSIBILITIES:

- See specific street element or design treatment.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- Committee of Highway Supervisors:
www.phila.gov/streets/Committee_of_Supervi.html

**TREATMENT 4.8.3****CONSTRUCTION DISRUPTION**

Construction within the public-right-of-way and on adjacent properties often blocks sidewalks and disrupts pedestrian and bicycle travel. As a result, construction disruptions in the public right must be strictly permitted and enforced to preserve pedestrian safety and comfort.



Construction within the public right-of-way or that extends into or over the sidewalk must provide the minimum clear sidewalk width (4.3.2) or an alternative accessible path.

**APPLICATION:**

- Appropriate on all street types.

CONSIDERATIONS:

- Construction within the public right-of-way or that extends into or over the sidewalk must provide the minimum clear sidewalk width (4.3.2) or an alternative accessible path.

DESIGN:

- Chapter 11-600 of the Philadelphia Streets Code addresses construction, encroachments, and projections over, on, and under streets.
- MUTCD provides standards for work zone signs and traffic controls.
- Paving plan guidelines: Where the existing footway is disturbed due to curb replacement, the footway must be replaced from the back of curb to the first joint in the footway.

ROLES & RESPONSIBILITIES:

- Streets Department is responsible for permitting and enforcing construction disruptions within the right-of-way.

EXAMPLES:

- Common throughout Philadelphia

RESOURCES:

- PennDOT Work Zone Manual publication 213
- MUTCD



TREATMENT 4.8.4

STORMWATER MANAGEMENT

PWD is committed to a balanced “land-water-infrastructure” approach to achieve its watershed management goals. This method focuses on implementation of a range of land-based stormwater management techniques, including green infrastructure that can be incorporated into complete streets improvements. This approach helps achieve regulatory compliance objectives in a cost-effective manner.



Porous pavement on Percy Street.



Stormwater planter.

APPLICATION:

- Appropriate on all street types.

CONSIDERATIONS:

- Green stormwater infrastructure includes a range of soil-water-plant systems that intercept stormwater, infiltrate a portion of it into the ground, evaporate a portion of it into the air, and in some cases release a portion of it slowly back into the sewer system. Green infrastructure techniques that may be incorporated with complete streets include:
 - Stormwater planters
 - Stormwater tree pits and tree trenches
 - Stormwater bumpouts
 - Permeable pavers
 - Porous pavement
 - Green gutters

DESIGN:

- See PWD’s Green Street Design Manual
- See Street Trees
- See Curb Extensions p.22

ROLES & RESPONSIBILITIES:

- PWD reviews green stormwater infrastructure design.

EXAMPLES:

- See stormwater planters and curb extensions

RESOURCES:

- Philadelphia Green Streets Manual
- Philadelphia Stormwater Management Guidance Manual



4.9 INTERSECTION & CROSSING COMPONENT

The Intersection & Crossing Component addresses design treatments to facilitate safe movement of all modes at intersections. This component includes treatments that influence the safety, function, and quality of intersections and street crossings for all users, including intersection geometry, pavement markings, and traffic signals. Related items: Curb ramps (4.3 Pedestrian Component), medians (4.7 Cartway Component), transit stops (4.6 Curbside Management), lighting (4.4. Building & Furnishing Component).



Intersections should be designed to accommodate all users and minimize exposure to conflicts. (Source: KAI)



Complex intersections can be redesigned to eliminate conflict points and create an opportunity for public space and green infrastructure. (Adapted from San Francisco Better Streets Guide)

FUNDAMENTALS:

- Design intersections to reduce conflicts between modes and promote pedestrian and bicycle safety and comfort.
- Make intersections and crossings accessible (as required by ADA) by installing curb ramps (4.3.3) and providing adequate time to cross (4.9.6).
- Keep pedestrian crossing distances as short as possible to reduce exposure and increase safety.
 - Narrow streets or travel lanes (4.7.1)
 - Extend curbs or reduce radii (4.7.4, 4.7.3)
 - Break up long crossings with medians or refuge islands (4.7.3, 4.9.5),
- Consider providing frequent crossing opportunities:
 - Pedestrians take the most direct route to destinations and should have a safe crossing opportunity every 300 - 500'.
 - Crossings at intersections are generally adequate in downtown and other areas where city blocks are 500' long or less.
- Reduce vehicle speeds and increase visibility at intersections to decrease the number and severity of crashes.
- Simplify complex intersections. Where possible, convert skewed intersections to right angles and convert slip lanes to public space.

POLICY:

- The FHWA Manual on Uniform Traffic Control Devices (MUTCD) establishes national standards for signing, pavement markings, and signals at intersections.
- The current Federal Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way provides standards for the design, construction, and

alteration of intersection facilities to ensure accessibility for pedestrians with disabilities.

- The Philadelphia Code Title 12-1200 establishes standards and regulations related to traffic control devices on City operated streets.

ROLES & RESPONSIBILITIES:

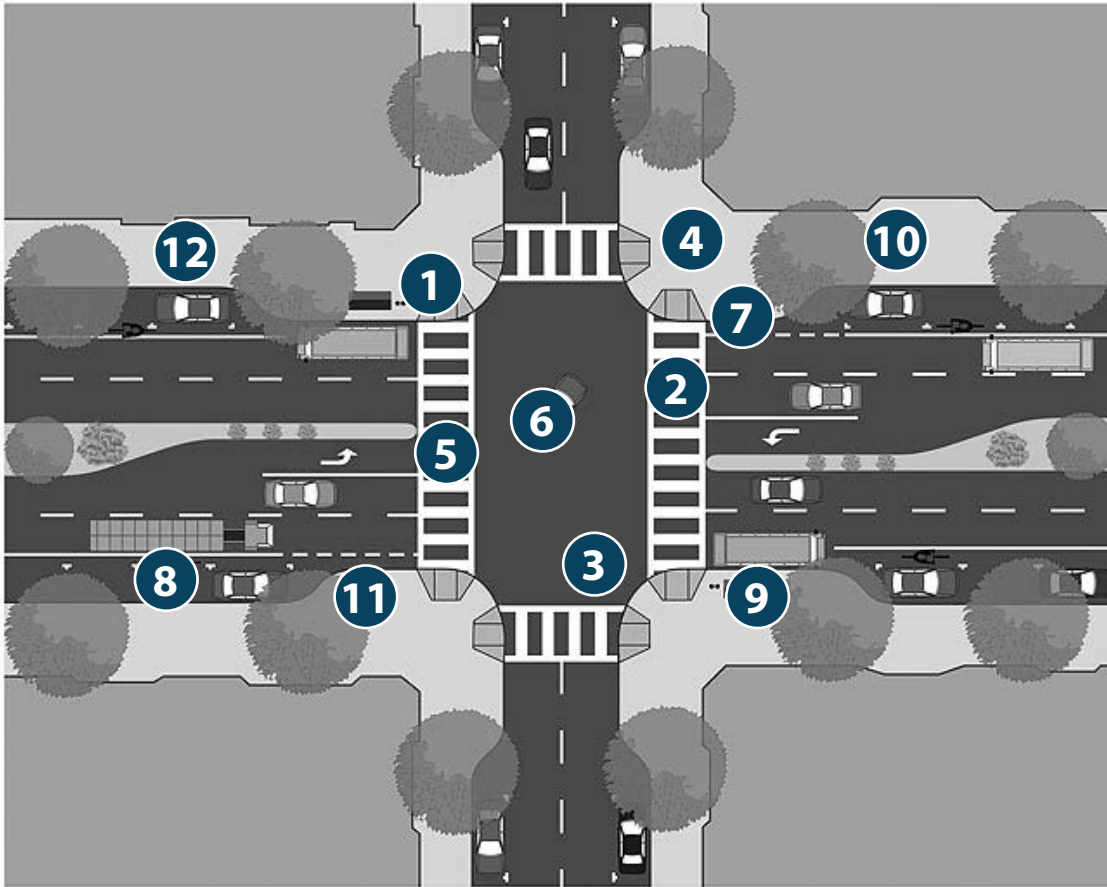
- Streets Department Traffic and Street Lighting Divisions install and maintain traffic signals, pedestrian crosswalks and other treatments at intersections throughout the City.
- Streets Department and PennDOT District 6 are jointly responsible for any intersections involving state highways or ramps within the City.

CONTACTS:

- Philadelphia Streets Department Traffic Engineering (for crosswalks and signals)
- Philadelphia Streets Department Engineering and Design (for curbside issues)
- PennDOT District 6

OTHER RESOURCES:

- Smart Transportation Guidebook provides guidance on intersection treatments.



THE BASICS OF GOOD COMPLETE STREET INTERSECTION DESIGN:

1. ADA Curb Ramps (4.3.3)
2. Marked Crosswalks (4.9.1)
3. Tight Curb Radii (4.9.3)
4. Curb Extension (4.9.4)
5. Pedestrian Refuge Island (4.9.5)
6. Signal Timing and Operations (4.9.6)
7. Bicycle Intersection Treatments (4.9.9, 4.9.10)
8. Parking Restricted at Corners (4.6.1)
9. Accessible Transit Stops (4.6.5)
10. Street and Pedestrian Lighting (4.4.4)
11. Street Trees, Planters, and Stormwater Planters (4.4.7 – 4.4.9)
12. Street Furnishings (4.4.5)

RETROFITTING COMPLEX INTERSECTIONS AND “OVERSIZED” STREETS

In many locations in Philadelphia and other cities, historic development patterns and intersecting street grids have resulted in the creation of large complex intersections with excessive areas of unused, paved space. These intersections create unnecessary impervious surfaces that prevent storm-water absorption, increase pedestrian crossing lengths, and create undefined roadway space that can increase vehicle speeds and conflicts between roadway users. Similarly, some city streets and intersections were designed to accommodate more traffic than actually uses them.

These excess paved areas provide many opportunities to create pedestrian improvements, green streets, and active public spaces. Unused paved spaces can be brought to sidewalk level and repurposed to include landscaping, parklets, rain gardens, seating, public art, and other green space and active uses. Retrofitted intersection and street areas should be landscaped or use special paving materials to differentiate them from surrounding areas and may be designed to serve as stormwater retention and infiltration areas. Each case is unique, but even small spaces can be effectively used for local improvements:

- 25 square feet can be enough for healthy tree planting; even less is necessary for corner landscaping.
- A few feet of roadway width along a street can provide space for a swale or landscaped strip.
- A 7' corner or mid-block curb extension can provide space for seating areas.

MOTU's Pedestrian Plaza Program has established initial guidelines and process for seasonal conversions of on-street parking spaces for café seating and other uses. The City will expand on lessons learned from this program and explore additional opportunities to “right-size” select intersections and streets.



**TREATMENT 4.9.1****MARKED CROSSWALKS AT CONTROLLED INTERSECTIONS**

In Pennsylvania, the lateral extension of a sidewalk through an intersection is a “crosswalk,” even if it is not marked (PA Vehicle Code). Marked crosswalks delineate preferred crossing routes for pedestrians and alert other road users where to expect crossing pedestrians. Philadelphia currently uses two types of crosswalk markings: a standard crosswalk and a “high visibility” continental crosswalk.



Continental crosswalks provide a high-visibility crossing treatment. (KAI – Signalized intersection S. Philadelphia)



Crosswalks should be at least as wide as the sidewalk, but wider crosswalks can be provided at high traffic areas. (KAI – 34th St south of Walnut St)

APPLICATION:

- Appropriate on all street types.
- All signalized and stop controlled intersections on all street types. (see 4.9.2 for details on uncontrolled crossings).
- Continental striping used at high priority intersections where greater visibility is desired:
 - School crossings
 - Where 2 or more transit routes cross
 - Subway or el station crossings
 - Trolley line stops
 - Business District crossings

CONSIDERATIONS:

- Crosswalks should generally be marked to denote where it is recommended/desirable for pedestrians to cross.
- Legally, crosswalks exist at all intersections (including T-intersections) unless specifically prohibited. A crosswalk may be marked or unmarked.
- Factors to consider when deciding to stripe crosswalks include: high pedestrian crossing volumes, vehicle volumes, elderly or disabled pedestrian volumes, school zone locations, number of traffic lanes, pedestrian destinations, prevailing traffic speed, distance to the nearest marked crosswalk, sight distance, gaps in traffic, and illumination.

DESIGN:

- Must be paired with curb ramps and tactile warning strips per ADA guidelines (see Curb Ramps 4.3.3).
- Crosswalk width – 15’ inside Center City, 10’ outside Center City. Wider crosswalks may be provided to accommodate additional pedestrian traffic.
- Standard crosswalk – 10-15’ wide with 6” white stripes.
- Continental crosswalk – 10-15’ wide with 24” vertical white stripes 4” apart.
- Stop bar line – 24 inch white stripe, 4’ from crosswalk at stop sign, 10’ at signal
- Dura-Therm thermo-plastic is the only decorative crosswalk currently used by the City, but other materials that can be maintained will be considered.
- Crosswalks should be marked as close and perpendicular as possible to turning traffic that will move at the same time, for best visibility.
- Continental crosswalk markings should either be, aligned with the edges of travel lane lines or at the center of travel lanes so that vehicle tires will not pass over the markings, extending their useful life.
- Provide positive drainage at corners so that water does not pool on crosswalks.

GREEN STREET OPPORTUNITIES:

- Combine with stormwater curb bumpouts (4.9.4).

ROLES & RESPONSIBILITIES:

- Streets Department Traffic Engineering Division marks and maintains pedestrian crosswalks.
- Streets Department Traffic Engineering Division writes work orders for crosswalks.
- Maintenance and installation costs of continental crosswalks are higher than for standard crosswalks.
- The City does not currently use in-pavement lighting at crosswalks, but could consider this treatment provided a maintenance agreement with a local partner.

EXAMPLES:

- Dura-Therm crosswalks at 15th/Market and Broad/Cherry
 - Improved crosswalks on Roosevelt Blvd
- RESOURCES:**
- MUTCD contains standards and guidance on crosswalk warning signs, signals, and supplementary markings.

DECORATIVE CROSSWALKS

Decorative crosswalks can contribute to the unique character and interest of a neighborhood. Decorative crosswalks may use additional materials or colors to supplement MUTCD crosswalk markings, but they are not a substitute. Decorative crosswalk markings should be highly visible to pedestrians and motorists, particularly at night, and should not use materials that are slippery, create tripping hazards, or are difficult for individuals with disabilities to traverse (e.g., granite, cobblestones).

Streets Department will currently permit decorative sidewalks, provided a local partner signs a maintenance agreement. Dura-Therm thermoplastic is the only decorative crosswalk treatment currently used by the City, but other materials can be considered. Standard MUTCD transverse pavement markings must also be used with non-retroreflective decorative crosswalks. Thermoplastic tape is initially more costly than paint and requires expertise to install; however, it is more slip resistant and requires a lower level of maintenance than paint if installed properly.



**TREATMENT 4.9.2****UNCONTROLLED CROSSINGS**

An “uncontrolled crossing” is a pedestrian crossing at any intersection or midblock location that does not have a traffic control (e.g., traffic signal, stop signs). When other crossing opportunities are distant or where a destination creates high crossing demand, pedestrians will frequently cross at uncontrolled locations. Improvements at uncontrolled crossing locations should be evaluated and designed to balance pedestrian and vehicle access and safety.



In-street or posted “Yield to Pedestrians” signs (R1-6 or R1-5) and pedestrian warning signs (W11-2) are encouraged at uncontrolled crossings per MUTCD guidance (Source: FHWA)

APPLICATION:

- Appropriate in some circumstances on multiple street types. Evaluated on a case-by-case basis.

CONSIDERATIONS:

- Legally, crosswalks exist at all intersections (including T-intersections) unless specifically prohibited. A crosswalk may be marked or unmarked.
- Crosswalks should generally be marked to denote where it is recommended/desirable for pedestrians to cross.
- The City does not have a policy addressing crossings at uncontrolled locations, but relies on FHWA guidance, PennDOT regulations, and site specific engineering analysis.
- Decision to mark a crosswalk at an uncontrolled intersection should be informed by an engineering study.
- Marked crossings at uncontrolled locations should be carefully planned and supplemented with appropriate safety measures, such as raised medians (5.7.3), refuge islands (4.9.5), traffic calming treatments, lighting
- (4.4.4), traffic signals, signs, and/or warning beacons.
- On roads with 4 or more lanes, high traffic volumes, or speeds over 40 mph, marking crosswalks at uncontrolled crossings without providing additional pedestrian safety improvements can lead to a higher rate of pedestrian crashes. (FHWA 2002).

DESIGN:

- Must be paired with curb ramps and tactile warning strips per ADA guidelines (see Curb Ramps 4.3.3).
- Continental crosswalk – 10’ wide with 24” vertical white stripes 4’ apart (center to center).

- May be combined with curb extensions (4.9.4) where possible to shorten crossing distance and improve sight distance for pedestrians and vehicles.
- Pedestrian lighting oriented towards the crossing should be considered (see 4.4.4).
- In-street or posted “Yield to Pedestrians” signs (MUTCD R1-6 or R1-5) should be used at crosswalks at uncontrolled intersections.

GREEN STREET OPPORTUNITIES:

- Combine with stormwater curb bumpouts (4.9.4).

ROLES & RESPONSIBILITIES:

- Streets Department marks and maintains pedestrian crosswalks.
- Streets Department Traffic Engineering Division writes work orders for crosswalks.
- PennDOT encourages and provides in-roadway “Yield to Pedestrians” signs for use at uncontrolled intersections with significant pedestrian activity (local partners install and maintain).

EXAMPLES:

- 34th Street between Walnut and Spruce Streets - University of Pennsylvania campus
- Main Street near pedestrian overpass to Dawson Street

RESOURCES:

- NCHRP Report 562: Improving Pedestrian Safety at Unsignalized Crossings provides detailed guidance to evaluate appropriate use of marked crosswalks
- PennDOT Midblock Crossing Checklist
- <ftp://ftp.dot.state.pa.us/public/PubsForms/Forms/TE-113.pdf>
- FHWA Informational Report on Lighting Design for Midblock Crosswalks
- <http://www.fhwa.dot.gov/publications/research/safety/08053/index.cfm>

MIDBLOCK CROSSINGS

Midblock crossings, marked crosswalks at non-intersection locations are generally not desirable or necessary in Philadelphia, given the City's relatively fine-grained grid block system. Midblock crossings can increase convenience for pedestrians, but can potentially increase conflicts between pedestrians and vehicles if not located and designed appropriately.

Locations where midblock crossings may be justified include long blocks or other areas with far spaced intersection crossings and high priority, high demand midblock pedestrian destinations (e.g., schools, transit stations). If implemented, midblock crossings should be located a minimum of 300' from the nearest intersection with a crosswalk. SEPTA should be consulted when evaluating midblock crossings on streets with transit service. When planning new development, it is preferable to orient building entrances/exits to face intersection crossings to reduce demand for midblock crossing.

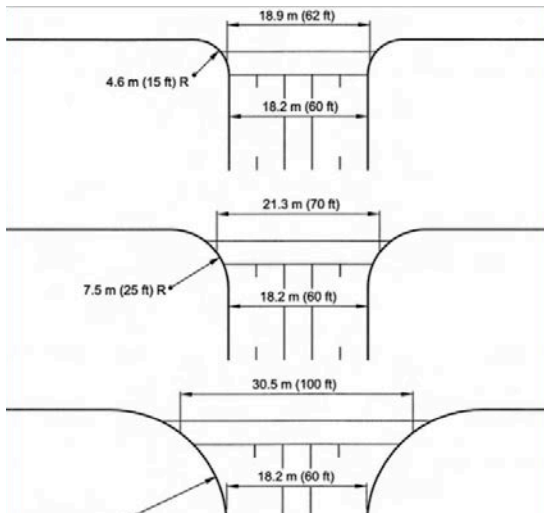


**TREATMENT 4.9.3****CURB/CORNER RADII**

The curb radius of intersection corners impacts turning vehicles and pedestrian crossing distances. Larger curb radii allow larger vehicles, such as buses and trucks, to make right turns without encroaching on adjacent travel lanes or the sidewalk, but increase the crossing distance for pedestrians and allow smaller vehicles to turn at faster speeds. Shorter curb radii slow turning traffic and create shorter crossing distances, but can make it difficult for larger vehicles to navigate the intersection.



Large curb radii lengthen pedestrian crossing distances and allow vehicles to make turns at high speeds (KAI – Walnut St and Rittenhouse Square).



A change in curb radius from 15 to 50' will increase the crossing distance from 62 to 100' and increase pedestrian crossing time by 16-25 seconds (FHWA, 2004).

APPLICATION:

- All intersections and street types.
- Curb radii are contingent on the context and traffic characteristics of an intersection (e.g., land use, traffic volume, vehicle sizes).

CONSIDERATIONS:

- The “effective curb radius” which includes the clear area provided by parking or bike lanes, may be a more appropriate access measure than the actual curb radius.
- Elements to consider when determining appropriate curb radius include:
 - Volume of pedestrians
 - Length of pedestrian crossing
 - Size and location of curb ramps (4.3.3)
 - Right turns by buses or frequent large trucks or turning radius of vehicles regularly using the intersection
 - Width of intersecting streets
- Occasional large vehicles can encroach into the adjacent travel lane to turn at intersections with small curb radii.
- If large turning vehicles are common at an intersection, curb radii that are too small may degrade the quality and safety of pedestrian facilities as trucks frequently run over the curb and encroach on the sidewalk.
- A curb radius of 25' and a parking lane will permit a single-unit truck to turn without encroaching on the curb.

DESIGN:

- City prefers the smallest turning radius that still allows access to the larger vehicles using the street.
- Many existing curb radii are 10 to 12' or smaller due to the age of the City. This is consistent with AASHTO Green Book standards for curb radii at intersections with minimal truck traffic (10-15').
- The recommended curb radius for subdivisions is 10-12'. Current zoning code for subdivisions requires a 15' minimum radius.
- Use turn templates or software to determine the most appropriate curb radii for specific conditions and context.

GREEN STREET OPPORTUNITIES:

- Combine with stormwater curb bumpouts (4.9.4).

ROLES & RESPONSIBILITIES:

- Streets Department determines appropriate curb radii on City streets.
- Adjacent property owners are responsible for maintenance of curbs.

EXAMPLES:

- Curb radii have been reduced at I 76 and South St

RESOURCES:

- Smart Transportation Guidebook
- ITE Context Sensitive Solutions for Urban Thoroughfares

**TREATMENT 4.9.4****CURB EXTENSIONS**

Curb extensions (also known as “bumpouts” or “bulbouts”) extend the sidewalk out into the street, usually to the edge of the on-street parking lane. Curb extensions at intersections reduce pedestrian crossing distance, encourage slower vehicle speeds through roadway narrowing, and improve visibility for pedestrians and drivers. Curb extensions can also provide additional sidewalk space at busy intersections and space for ADA curb ramps.



Curb extensions can be used at marked crossings to accommodate stormwater management features, street furniture, bike parking, transit stops, or other features. Above: John F. Kennedy Blvd and 18th St. Below: Queen Lane and McMichael St



Stormwater bump-outs provide the pedestrian crossing benefits of curb extensions and help manage stormwater overflow.

APPLICATION:

- Appropriate for all street types with on-street parking (4.6.1).
- Where traffic calming or reduced crossing distance is desired.
- Transit stops (“bus bulbs”) (4.6.5)
- Marked crosswalks (4.9.1, 4.9.2)

CONSIDERATIONS:

- Feasibility of curb extensions should be evaluated whenever curb ramps are installed or an intersection is reconstructed.
- At corners, curb extensions slow turning vehicles and increase the visibility of crossing pedestrians.
- Can be used to define the ends of angle parking or discourage large vehicle turns onto certain streets
- Keeps fire hydrant zone clear when located in front of a hydrant.
- Helps protect against parking in the crosswalk.
- May complicate delivery access, garbage removal, snow removal, and street sweeping.
- Can be used to accommodate street furniture (4.4.5), transit stops (4.6.5), plantings (4.4.8), or stormwater management features (4.8.4).
- Curb extensions at transit stops can eliminate the need for buses to merge in and out of traffic. Consult with SEPTA to ensure curb extension design accommodates passenger boarding and alighting.
- Cost and complexity of reworking drainage and utility access at the intersection can be a limiting factor.

DESIGN:

- Curb extensions should not extend into bike lanes (where present).
- Larger curb radii may be necessary to accommodate curb extensions at some intersections.
- Figure X shows typical design in Philadelphia, however designs vary based on context:
- 1-2’ narrower than the parking lane (approximately 6’)
- Minimum 15’ long
- 0’ curb radius
- City encourages incorporating stormwater planters (4.4.9) into curb extensions where feasible.
- Furnishings or plantings on curb extensions must maintain adequate sight lines.

GREEN STREET OPPORTUNITIES:

- Stormwater bumpouts are generally appropriate at sites on the low end of an average sized block (500’ x 400’) with adequate drainage and limited utility conflicts. See PWD’s Green Street Design Manual for stormwater bumpout design details.
- A stormwater bump-out is a fully or partially vegetated curb extension (4.9.4) that protrudes into the street either mid-block or at an intersection. A bump-out is composed of a layer of stone topped with soil and short plants to preserve open sight lines for traffic. An inlet or curb-cut directs runoff into the bump-out structure where it can be stored, infiltrated, and taken up by the plants (evapotranspiration). Excess runoff is permitted to leave the system and flow to an existing inlet. Aside from managing stormwater, bump-outs also help with traffic-calming.

ROLES & RESPONSIBILITIES:

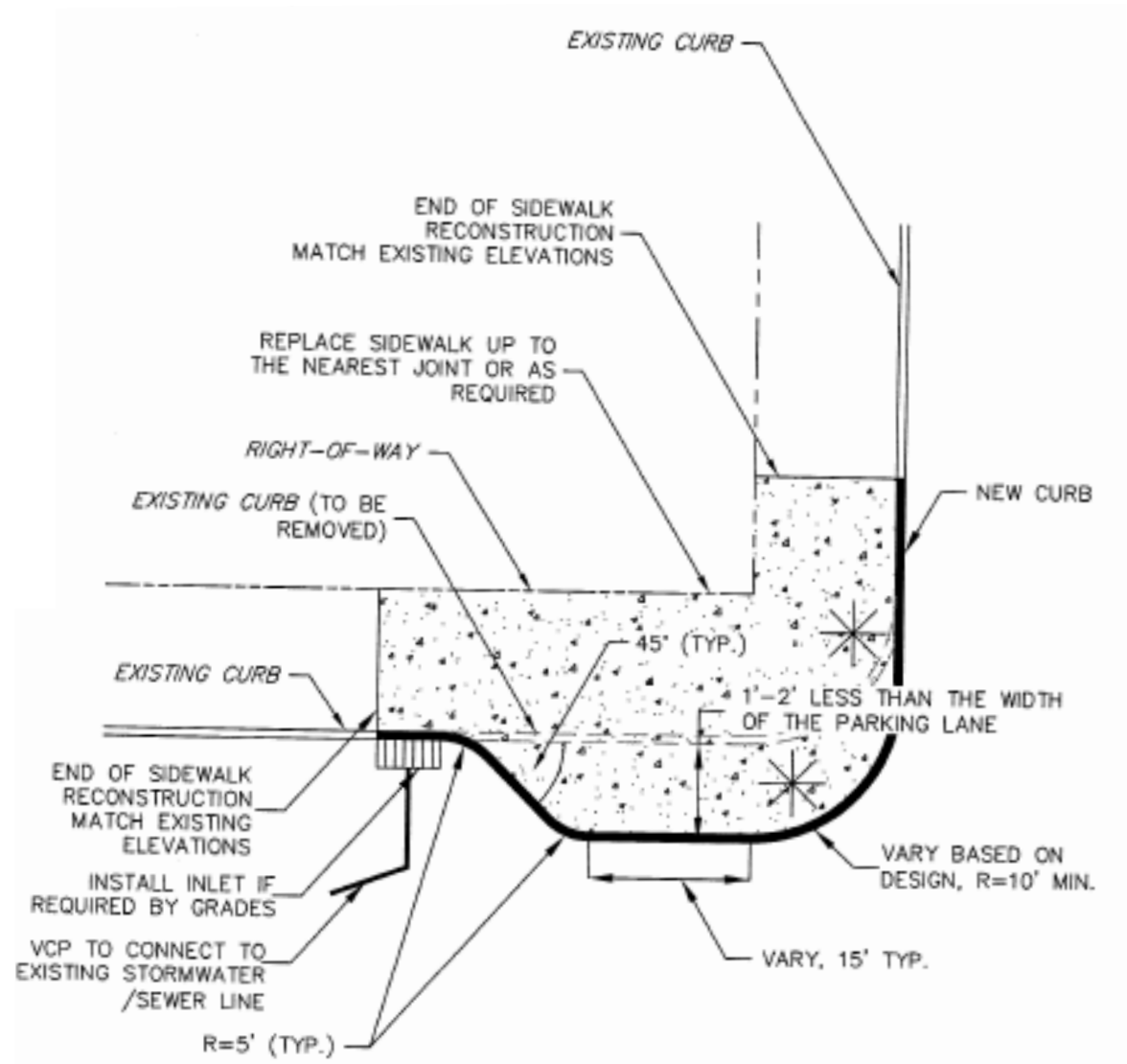
- Curb extensions are an extension of the sidewalk and, therefore, are the maintenance responsibility of the adjacent property owner.
- Streets Department partners with the Water Department to construct stormwater curb extensions. The adjacent property owner is typically responsible for maintenance.

EXAMPLES:

- City has used curb extensions in multiple locations for traffic calming and safety projects
- Multiple curb extensions on John F. Kennedy Blvd and Washington Ave accommodate furnishings and transit stops
- The “Big Green Map” shows locations of stormwater bumpouts throughout the City www.phillywatersheds.org

RESOURCES:

- The Philadelphia Green Streets Manual provides additional information on curb extension design to accommodate stormwater and other features
- U.S. Traffic Calming Manual

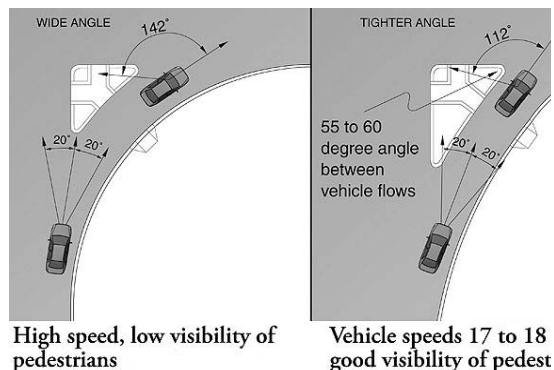
TYPICAL CURB EXTENSION CONSTRUCTION



TREATMENT 4.9.5

PEDESTRIAN REFUGE ISLANDS

Islands can be used to channelize turning traffic, divide opposing or same direction traffic, and provide a space for pedestrians to safely wait or rest while crossing streets. By breaking long or difficult crossings into several shorter, simpler crossings, islands make it easier for pedestrians to find gaps in traffic, and increase safety.



Pedestrian islands at intersections with channelized turn lanes should be designed to increase pedestrian visibility and slow vehicle speeds (ITE).



Island can be used for low plantings to provide stormwater management and prevent vehicle encroachment. At-grade pedestrian cut-throughs increase accessibility. (StreetsblogNYC)

APPLICATION:

- Should be considered at all pedestrian crossings where total roadway width exceeds 60' (Smart Transportation Guidebook).
- High volume intersections with 4 or more lanes.
- Large intersections where signal timing may not allow pedestrians to cross in one phase.
- Intersections with difficult crossing geometry.

CONSIDERATIONS:

- Streets Department considers on a case-by-case basis.
- Painted islands or medians (4.7.3) have lower maintenance costs, but provide limited protection for pedestrians.
- Should be designed to discourage vehicles from encroaching onto them (e.g., include plantings or bollards).
- Can be used as green infrastructure as long as planting heights are restricted near intersections to preserve sight lines.
- When designed correctly, channelized right turn lanes can increase pedestrian visibility and decrease crossing distance; however, channelized right-turns should be avoided where possible in areas with significant pedestrian activity and reserved for approaches with 200-300 right turns per hour. Wherever possible and appropriate, channelized turn lanes in high pedestrian activity areas should be redesigned to create pedestrian plazas and/or stormwater planters (4.4.9).

DESIGN:

- Treatments and widths vary based on design.
- Refuge islands must provide 5' clear walking zone width.

- Recommended minimum median width is 6':
 - Detectable warning surfaces are not required at pedestrian refuge islands that are cut-through at street level and are less than 6' wide.
 - At signalized locations with pedestrian refuges less than 6' wide, the signal should be timed to allow pedestrians to cross the entire street in one phase.
- Include curb ramps (4.3.3) or at-grade pedestrian cut-through (equal to or greater than the clear width of approaching sidewalks) and median "nose" for safety and access.
- Where justified, channelized turn islands should be designed at a low angle for low speeds (5-10 mph) and high pedestrian visibility. It is preferable for right turns and the pedestrian crossing to be signalized.
- Consider providing Z-shaped median crossings on wide, high-speed roadways or adjacent to rail transit where space is available to force pedestrians to face oncoming traffic before crossing.
- GREEN STREET OPPORTUNITIES:
 - Incorporate landscaping or stormwater planters (4.4.9).

ROLES & RESPONSIBILITIES:

- Streets Department installs and maintains pedestrian islands and medians.
- Developer is responsible for maintaining landscaped islands and medians. This requires an agreement with the City.
- PennDOT is involved on state routes.

EXAMPLES:

- Multiple locations on Spring Garden St
- 16th St and Benjamin Franklin Pkwy

RESOURCES:

- U.S. Access Board's Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
- Smart Transportation Guidebook
- ITE Context Sensitive Solutions for Urban Thoroughfares



TREATMENT 4.9.6

SIGNAL TIMING & OPERATIONS

The timing, phasing, and coordination of traffic signals impacts all modes. Well-planned signals reduce delay and unnecessary stops at intersections, thus improving traffic flow without roadway widening. Pedestrian signal indicators inform pedestrians when to cross at signalized intersections by providing WALK, flashing DON'T WALK, and DON'T WALK indicators. Pedestrian countdown displays inform pedestrians how long they have to cross a street before the signal changes.



Posted (MUTCD R10-11) "No Turn on Red" signs are used to reduce conflicts between turning vehicles, pedestrians, and cyclists (KAI – 34th and Walnut)



Accessible pedestrian push buttons indicate the WALK sign is lit through sound or other nonvisual signal. Push buttons should be located and signed according to MUTCD and PROWAG standards (MUTCD R10-4) (KAI)

APPLICATION:

- All signalized intersections.
- Pedestrian signal indications should be used at all signalized crossings more than 26' wide, but are prioritized at signalized intersections based on:
 - Crossing length (generally prioritize crossings greater than 40');
 - Pedestrian volumes;
 - Number of pedestrian crashes in the last five years; and
 - Proximity to schools and senior facilities.
- Countdown signals are installed at all intersections with pedestrian indicators.

CONSIDERATIONS:

- Signals should be coordinated to encourage appropriate traffic speeds and accommodate pedestrians and bicyclists, particularly on one-way streets. Improving signal coordination has been shown to reduce travel times by 10-20 percent.
- Providing a WALK signal during each signal cycle automatically ("Ped Recall") reduces pedestrian delay at intersections and eliminates the need for push buttons. Ped Recall should be used at all fixed-time signals and at actuated signals with high pedestrian volumes.
- Leading pedestrian intervals (LPI) provide pedestrians a "head start" by giving them a WALK indication before vehicles are given a green indication. Most appropriate at intersections with a high number of turning vehicle conflicts with pedestrians and right-of-way violations. The length of the LPI is typically 3-6 seconds.
- Prohibiting right turns on red can reduce conflicts between turning motorists and pedestrians. Mounted signs can be used to eliminate right turns

at all times or during select time periods.

- Permitted left turns (left turns that are not a protected movement indicated by a green arrow indication) can increase conflicts between turning motorists and pedestrians.
- All-way pedestrian phases – "pedestrian scrambles" – are used in limited instances due to delay for all users. Most appropriate at intersections where crossing distances are short and turning vehicles conflict with very high pedestrian volumes.
- Signals should accommodate bicycles by providing adequate clearance time. At actuated signals, bicycle detection (loop detectors, cameras, or push buttons) should be provided. Where high volume bicycle movements conflict with vehicle movements, a separate bicycle signal phase (4.9.9) is recommended.
- Push buttons should be designed and located in accordance with ADA guidelines.
- The City does not currently have a policy on audible pedestrian signals.

DESIGN:

- The City uses international pedestrian symbols (Man/Hand) rather than "WALK"/"DON'T WALK" indications.
- Preferred signal cycle is 60 seconds. This length reduces pedestrian wait time and minimizes jaywalking.
- The 2009 MUTCD recommends using a standard walking speed of 3.5' per second to calculate the minimum pedestrian clearance time (flashing DON'T WALK plus yellow and all-red phases) at signals. The City follows MUTCD for clearance times, but extra WALK time should be provided when possible.

ROLES & RESPONSIBILITIES:

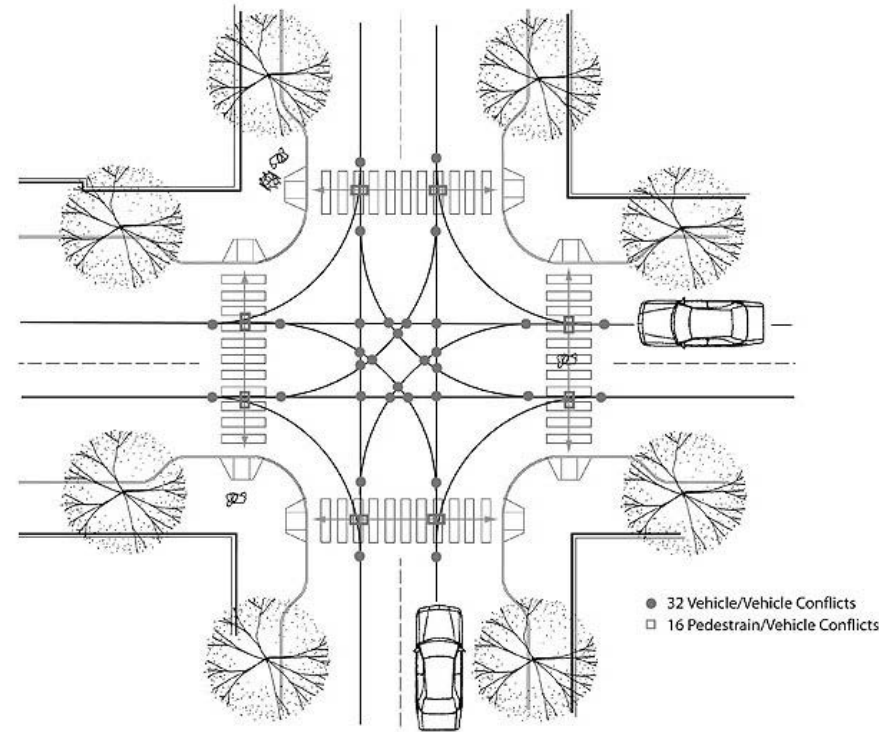
- Streets Department Traffic Engineering unit installs and maintains traffic signals

EXAMPLES:

- Audible pedestrian signals on Broad Street and near the Veteran's Hospital

RESOURCES:

- FHWA Signal Timing Manual
- MUTCD
- U.S. Access Board's Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
- ITE Context Sensitive Solutions for Urban Thoroughfares



There are 16 vehicle/pedestrian conflict points in a typical 4-leg intersection. Protected left turn signal phasing helps increase pedestrian safety by eliminating conflict points between pedestrians crossing at a WALK indication and left turning vehicles accelerating through a gap in oncoming traffic at a green indication. (ITE)



TREATMENT 4.9.7

PEDESTRIAN HYBRID BEACONS

Hybrid beacons (also known as HAWK signals) remain unlit until a pedestrian actuates the signal to indicate they want to cross. The hybrid beacon first shows a yellow light to alert drivers to slow, then a solid red light that requires drivers to stop while pedestrians have the right-of-way to cross the street.



HAWK signal at a school crossing (FHWA)



HAWK signal on a neighborhood collector. Portland, OR (bikeportland)

APPLICATION:

- Uncontrolled crossings (4.9.2) with high pedestrian crossing volumes.
- Larger roadways where crossing opportunities are limited and difficult, but a full traffic signal is not desired and/or warranted.

CONSIDERATIONS:

- Must be pedestrian activated, so push button must be clearly labeled and located, and should include a response signal.
- Drivers experience less delay at hybrid beacons compared to other signalized intersections.
- Hybrid beacons are less expensive than full traffic signals, but more expensive than other pedestrian crossing treatments.
- Placement should be supported by an engineering study.
- May be coordinated with surrounding signals.
- Outreach may be needed to educate roadway users of expected behavior.

DESIGN:

- Push button design and location should follow ADA guidelines.
- Should be paired with signs and pavement markings indicated in MUTCD.
- HAWK signals currently have FHWA experimental status. PennDOT does not currently allow HAWKs on state-owned or operated facilities.

GREEN STREET OPPORTUNITIES:

- Incorporate with stormwater bumpouts (4.9.4) to reduce crossing distance.

ROLES & RESPONSIBILITIES:

- City is currently developing policy for hybrid beacons; Streets Department will likely install and maintain.

EXAMPLES:

- Not currently used in the City

RESOURCES:

- MUTCD (Chapter 4F)
- NCHRP Report 562

**TREATMENT 4.9.8****RECTANGULAR RAPID FLASH BEACONS (RRFB)**

Similar to hybrid beacons, RRFBs are a pedestrian actuated crossing treatment. RRFBs are signs with a “strobe light” flashing pattern that attracts attention and notifies motorists that pedestrians are crossing.



RRFB's with continental crosswalks at a midblock crossings (KAI – 34th St south of Walnut St)

**APPLICATION:**

- Uncontrolled crossings (4.9.2) with high pedestrian crossing volumes

CONSIDERATIONS:

- Must be pedestrian activated, so push button must be clearly labeled and located and should include a response signal.
- Drivers may not know how to respond to the flashing lights. Outreach may be needed to educate roadway users of expected behavior.
- Placement should be supported by an engineering study.
- RRFBs are intended to raise awareness and visibility of pedestrians, but do not have a legal status.

DESIGN:

- PennDOT's Bureau of Highway Safety and Traffic Engineering (BHSTE) has developed Interim Approval Requirements for RRFBs.
- Push button design and location should follow ADA guidelines.
- Should be paired with signs and pavement markings indicated in MUTCD.

GREEN STREET OPPORTUNITIES:

- Incorporate with stormwater bumpouts (4.9.4) to reduce crossing distance.
- ROLES & RESPONSIBILITIES:
- Streets Department Traffic Engineering Unit installs and maintains.

EXAMPLES:

- 34th Street between Walnut St and Chestnut St
- Installations planned at several additional locations

RESOURCES:

- MUTCD
- NCHRP Report 562
- Smart Transportation Guidebook
- U.S. Access Board's Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

**TREATMENT 4.9.9****BICYCLE SIGNALS**

At some intersections bicyclists have different needs than other roadway users (e.g., bicycle only movements). In these areas, bicycle signal heads can be used to provide additional guidance to bicyclists and other roadway users. Bicycle signals are used in combination with conventional traffic signals and use the standard green, yellow, red lenses with the addition of a bicycle stencil.



Bicycle signals should be accompanied by a “Bicycle Signal” sign to provide clarification for motorists and cyclists.



Bicycle detection should be provided at signalized intersections if the phase(s) serving bicycle movements is not set to recall each cycle. The “Bicycle Detector” pavement marking and sign (MUTCD 9C-7 and R10-22) should be used at intersections with in-pavement detectors.

APPLICATION:

- Existing signalized intersections.
- Intersections with bicycle only movements or bicycle movements that conflict with other roadway users.
- Multi-use path crossings.

CONSIDERATIONS:

- Prioritizes bicycle movements and separates them from conflicting movements.
- May improve safety and comfort of cyclists and overall intersection operations.
- Preferable to instructing bicyclists to use pedestrian signals (though bicycle signals may be used in some situations where through bike and pedestrian movements are combined).
- Accommodates bicycle-only movements within signalized intersections.
- Adds some signal delay for all roadway users.

DESIGN:

- Not yet allowed by PennDOT, awaiting approval for use on state owned or operated roadways.
- Signal head should be clearly visible to oncoming bicycles.
- Bicycle phase should provide adequate clearance time and actuation/detection (if the bicycle phase is not set to recall each cycle) Currently there are no standards for determining bicycle clearance times.
- Design and operation should consider general MUTCD guidance, local conditions, and engineering judgment.
- Right turns on red should be prohibited if the bicycle signal is used to separate through bike movements from turning vehicles.

- Supplemental “Bicycle Signal” sign should be added below the signal head.
- **ROLES & RESPONSIBILITIES:**
- Streets Department Traffic Engineering Unit installs and maintains.
- Bicycle signal heads have the same maintenance requirements as standard traffic signal heads.

EXAMPLES:

- Not currently used in Philadelphia

RESOURCES:

- MUTCD
- NACTO Urban Bikeway Design Guide
- Bicycle Facilities and the MUTCD Guide: http://www.fhwa.dot.gov/environment/bikeped/mutcd_bike.htm

**TREATMENT 4.9.10****BIKE BOXES**

Bike boxes move back the stop bar for vehicles at signalized intersections to create a designated area for bicyclists to wait during the red signal phase. Bike boxes create a more comfortable and safe environment for cyclists by increasing their visibility to motorists and providing them a way to get ahead of queued traffic, thus reducing their exposure to vehicle exhaust, facilitating cyclist left turns, and reducing the likelihood of “right-hook” incidents.



Bike Boxes can be combined with green colored pavement and “Wait Here” pavement markings to increase visibility.



A defacto bike box is created by moving the stop bar 10’ back from the crosswalk at signalized intersections. (StreetsblogSF)

APPLICATION:

- The City has begun to move stop bars back 10’ from all crosswalks at signalized intersections.
- Signalized intersections on streets with bike lanes (4.5.1 – 4.5.5) or cycle tracks (4.5.6)
- Intersections with high volumes of motorists and bicyclists.
- Intersections with frequent motorist right-turns and/or bicyclist left-turns.

CONSIDERATIONS:

- Increases visibility and safety of cyclists.
- Helps prevent “right-hook” conflicts between cyclists and vehicles.
- Facilitates cyclist left turns and transitions from right to left side bike lanes (if box extends across entire intersection).

DESIGN:

- Transverse lines shall be used to create a bike box 10’ to 16’ deep and indicate where motor vehicles are required to stop (MUTCD 3B.16)
- A Bike Symbol or Helmeted Bicyclist Symbol (MUTCD 9C-3A or 9C-3B) shall be centered between the crosswalk line and stop line.
- Bike boxes may be combined with a green colored pavement background.

GREEN STREET OPPORTUNITIES:

- Incorporate pervious pavement.

ROLES & RESPONSIBILITIES:

- Streets Department Traffic Engineering Division marks and maintains bike boxes.

EXAMPLES:

- Benjamin Franklin Parkway and 20th St
- 13th Street

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide
- Bicycle Facilities and the MUTCD Guide: http://www.fhwa.dot.gov/environment/bikeped/mutcd_bike.htm
- MUTCD

**TREATMENT 4.9.11****RAISED CROSSINGS**

A raised crossing is a marked crosswalk that is constructed at a higher elevation than the surrounding roadway, bringing the crosswalk to the level of the sidewalk. Essentially, it is a raised speed table (4.7.2) that contains the full width of a marked crosswalk. As a result, raised crossings increase the visibility of pedestrian crossings and force vehicles to slow before proceeding over the crosswalk. Raised crossings also provide a level pedestrian path from curb to curb, so ramps are not required.



Raised crosswalks provide a level, highly visible crossing for pedestrians and traffic calming for vehicles. (Streetsblog SF)



Raised crosswalks should be accompanied by signs and pavement markings to alert motorists of the crossing and pavement change. Detectable warnings should also be used for pedestrians. (54th St south of City Ave)

APPLICATION:

- Existing crosswalks that also meet the criteria for raised speed reducers (4.7.2).
- Uncontrolled marked crossings (4.9.2) where additional speed reduction and visibility is desired.
- Streets with high pedestrian crossing demand and a maximum of two moving lanes.
- Gateways or where a street's function or type changes.
- Entrances to Local (3.11) or Shared Narrow (3.10) streets.
- Avoid on streets that are emergency response or major truck routes.
- Most appropriate for retrofitting existing streets where increased pedestrian visibility and reduced vehicle speeds are desired at crossings. New or reconstructed streets should be designed to achieve these results using roadway width, curb extensions (4.9.4), and other traffic calming treatments.

CONSIDERATIONS:

- May impact street drainage or require catch basin relocation. Can be combined with curb extensions (4.9.4) with planters or bioswales (4.4.8) to improve stormwater management (4.8.4).
- Decision to install raised crossing should be informed by an engineering study of the location, including speeds, geometry, and operations.
- At intersection locations, the raised area can be extended to include the entire intersection (generally in areas where pedestrian movement is a major priority and target vehicle speeds are less than 25 mph).

DESIGN:

- Should be accompanied by warning signs and pavement markings.
- Should be flush with the sidewalk in height. Detectable warnings should be used where pedestrians will cross into the cartway.
- The full width of the marked crosswalk (usually 10-15') should be contained within the flat portion of the speed table. Width of 10' typically allows both front and rear wheels of passenger vehicles to be on top of the table at the same time.
- Paving materials can utilize recycled content.

GREEN STREET OPPORTUNITIES:

- Incorporate with stormwater bumpouts (4.9.4) to reduce crossing distance.

ROLES & RESPONSIBILITIES:

- Snow plows must be given advance warning of raised crossings by warning signs or other methods.
- Streets Department maintains or identifies local maintenance partner.

EXAMPLES:

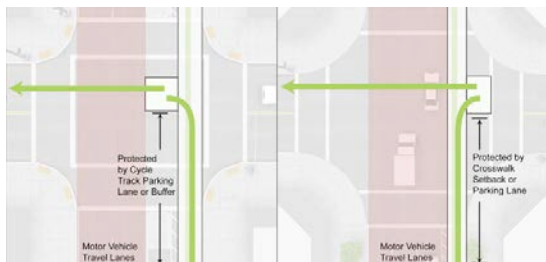
- 54th St south of City Avenue

RESOURCES:

- MUTCD
- ITE/FHWA Traffic Calming: State of the Practice includes guidance on speed table width

**TREATMENT 4.9.12****TWO-STAGE LEFT TURN QUEUE BOXES**

Two-stage turn queue boxes (sometimes referred to as Copenhagen lefts, hook turns, or box turns) provide an option for bicyclists to safely make left turns at signalized intersections. In a two-stage left turn, cyclists proceed straight through the intersection with the green signal and wait in a queue box on the cross street to proceed through the intersection on the next green signal.



Positioning of queuing box for streets with and without a buffered cycle track. (NACTO)



Two-stage left turn boxes provide a waiting area for cyclists at intersections where it is difficult to cross multiple lanes of traffic to make a left turn.

APPLICATION:

- Signalized intersections.
- Streets with high traffic volumes and/or speeds.
- Streets with a significant number of bicyclists making left-turns.
- Intersections where left-turns are difficult for bicyclists to maneuver, especially when cyclists must merge from a bike facility into heavy vehicle traffic.

CONSIDERATIONS:

- Increases bicyclist safety and comfort making some left turns.
- Reduces conflicts between bicyclists, turning motorists, and pedestrians in crosswalk.
- Preferable to instructing bicyclists to use pedestrian signals.
- Increases bicyclist signal delay (compared to turning from the left lane with vehicles).

DESIGN:

- Up to 9' long and 3' wide with bicycle stencil and turn arrow pavement markings.
- Located in a protected area:
 - Between bike lane and parking lane or setback crosswalk on streets with standard bike lanes (4.5.1).
 - Between cycle track (4.5.6) and motor vehicle travel lane on streets with cycle tracks to the right of on-street parking (4.6.1).

ROLES & RESPONSIBILITIES

- Streets Department installs and maintains.

EXAMPLES:

- Benjamin Franklin Parkway and 20th St

RESOURCES:

- Philadelphia Pedestrian & Bicycle Plan
- NACTO Urban Bikeway Design Guide
- CROW

**TREATMENT 4.9.13****TRAFFIC DIVERTERS**

Traffic diverters (or maintainers) are physical barriers that can be used to slow, redirect, or block vehicle traffic. This traffic calming treatment is primarily used at intersections in areas where it is desirable to reduce non-local traffic or prioritize non-motorized movements. Diverters can also be used to improve safety at intersections by eliminating some potential vehicle movements and conflicts.



Traffic diverter (velotraffic)



Diverters should limit motor vehicle movement, but enhance bicycle and pedestrian movement. (BikePortland)

APPLICATION:

- Local (3.11) streets with speed or non-local (“cut through”) traffic issues.
- Local streets where it is desirable to prioritize non-motorized movement and access.

CONSIDERATIONS:

- Green infrastructure opportunity. Can incorporate planters (4.4.8) or stormwater management features (4.8.4).
- May impact street drainage and utilities.
- Placement should consider emergency vehicle access needs.
- Network context and traffic impacts should be evaluated.
- Special consideration should be given to accommodate turning buses (on bus routes) and emergency vehicles.

DESIGN:

- Design should impact motor vehicles, but utilize at-grade channels, curb ramps (4.3.3), or other strategies to allow unimpeded bicycle movement.
- City does not currently have specific design guidance or policy regarding diverters.

GREEN STREET OPPORTUNITIES:

- Include stormwater planters (4.4.9) or landscaping.
- **ROLES & RESPONSIBILITIES:**
- Streets Department installs and maintains diverters.
- Developer is responsible for maintaining landscaped islands and medians (4.7.3). This requires an agreement with the City.

EXAMPLES:

- **Example?**

RESOURCES:

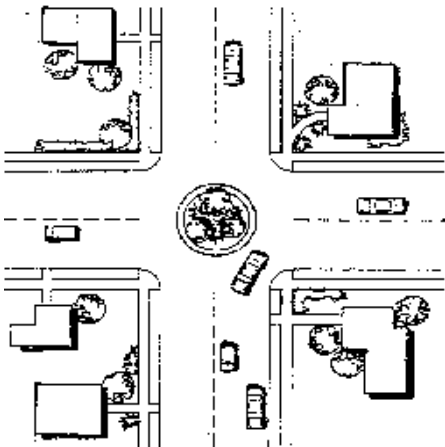
- ITE Traffic Calming Handbook

**TREATMENT 4.9.14****NEIGHBORHOOD TRAFFIC CIRCLES**

Neighborhood traffic circles are round traffic islands located in the center of a traditional intersection. Similar to roundabouts, neighborhood traffic circles have been shown to substantially reduce the number and severity of pedestrian and other crashes, but require less space and changes to intersection approaches.



Several cities have had dramatic reductions in pedestrian crashes on local streets by installing neighborhood traffic circles (Austin.metblogs.com)



Typical neighborhood traffic circle design (ITE)

APPLICATION:

- Primarily applicable to Local (3.11) and low speed, low-traffic street intersections.
- Existing all-way stop controlled intersections.
- City will not consider on narrow one-way streets.

CONSIDERATIONS:

- Center island can be used as a planter (4.4.8) or stormwater management feature (4.8.4).
- Avoid on streets that are major truck routes. Special consideration should be given to accommodate turning buses (on bus routes) and emergency vehicles.

DESIGN:

- The City currently refers to ITE guidance regarding neighborhood traffic circles.
- Design speeds should be limited to 10-15 mph.
- Install signs within the center island and “Keep Right” or similar signs at intersection approaches to increase visibility and inform drivers how to proceed through the intersection.
- Yield or stop signs may be used at approaches.

GREEN STREET OPPORTUNITIES:

- Include plantings in center island.

ROLES & RESPONSIBILITIES:

- Streets Department installs and maintains traffic circles.

EXAMPLES:

- Not currently used in Philadelphia

RESOURCES:

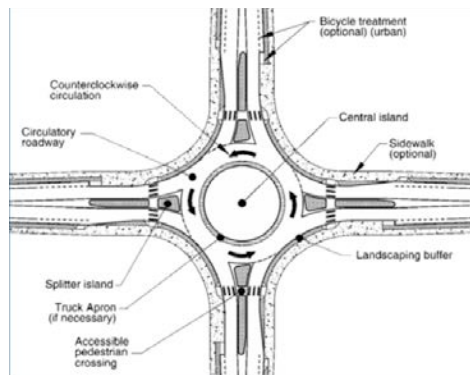
- ITE Traffic Calming Handbook



TREATMENT 4.9.15

ROUNDABOUTS

Roundabouts are circular intersections with one-way traffic flow around a central island. Roundabouts have been successfully implemented as an alternative to signalized intersections in a growing number of cities nationwide. The intersection design helps to maintain traffic flow while improving safety by reducing vehicle speeds and conflict points. Roundabouts are generally associated with fewer crashes and when crashes do occur they are less severe.



Roundabout design.



Roundabouts can be used to improve safety and operations at intersections and create new public space, particularly at intersections with complex geometry. (41st Dr and Landsdowne Dr)

APPLICATION:

- Appropriate on a variety of street types, generally as an alternative to intersection signalization.

CONSIDERATIONS:

- Center island can be used for green infrastructure or public space.
- Will require some public education and adjustment.
- Design considerations are needed to accommodate visually impaired pedestrians that are not accustomed to navigating circular intersections.
- Bicycles must navigate the roundabout by entering the lane and traveling with traffic or by traveling up a ramp onto the sidewalk.
- A truck apron should be provided around the center island if large vehicles are expected to use the intersection.
- Pedestrians may have to travel longer distances to cross street due to location of crosswalks away from intersection.
- Special consideration should be given to accommodate turning buses (on bus routes) and emergency vehicles.

DESIGN:

- The City does not currently have specific design guidance or policies regarding roundabouts.
- Roundabouts vary in diameter from 45 to 200', depending upon vehicle volumes and entry speeds.

GREEN STREET OPPORTUNITIES:

- Include plantings in center island.

ROLES & RESPONSIBILITIES:

- Streets Department installs and maintains roundabouts

EXAMPLES:

- 41st Dr and Landsdowne Dr
- Castor Ave and Wyoming Ave

RESOURCES:

- Roundabouts: An Informational Guide
- PennDOT Publication 414: Guide to Roundabouts

Design Element	Mini-roundabout	Urban Compact	Urban Single-Lane	Urban Double-Lane
Maximum entry design speed	15 mph	15 mph	20 mph	25 mph
Typical inscribed circle diameter	45-80 ft	80-100 ft	100-130 ft	150-180 ft
Typical daily service volume on 4-leg	10,000 veh/day	15,000 veh/day	20,000 veh/day	**

IMPLEMENTATION AND ENFORCEMENT

SECTION 05



To achieve Philadelphia’s vision of a safe, convenient street network for pedestrians, bicyclists, transit users, motorists, and goods movement, the City must identify strategies to implement and enforce the design guidance contained in the Philadelphia Complete Streets Design Handbook. This process will include incorporating the Handbook into project development and review processes, revising City Code and policies as necessary, implementing recommended complete streets improvements, and maintaining and evaluating these improvements over time. This section presents a preliminary “Complete Streets Project Review Checklist” that will provide a first step for implementing the Philadelphia Complete Streets Design Handbook and incorporating its guidance into the development review, permit approval, and street project design and planning processes.

5.1 COMPLETE STREETS PROJECT REVIEW CHECKLIST

In accordance with Philadelphia’s Complete Streets Executive Order (NO. 5-09) “all City departments and agencies shall, in connection with input into and decisions regarding all transportation and development projects, give full consideration to accommodation of the safety and convenience of all users of the transportation system, be they pedestrians, bicyclists, public transit users or motor vehicle drivers.” The following checklist documents how each of these modes were considered and accommodated in the process of planning and/or designing projects within or impacting the public right-of-way. If projects do not incorporate “required” or “high priority” complete streets design treatments (see **Tables 1** and **2**), project sponsors must document why not and what alternative accommodations will be provided for pedestrians, bicyclists, and transit users.

The checklist pertains to all permits and projects impacting the public right-of-way and is intended for use during project conception and design phase. The checklist can also be attached to street designs submitted to Streets Department for review or approval. Projects submitted to Streets Department for approval will be reviewed with respect to the topic areas addressed in this checklist. The description of the project scope, context, goals, and design provided by the submitter via this list will allow Streets Department and other reviewing agencies to provide a more expeditious evaluation, potentially reducing review time and minimizing requests for revisions late in the project development process.

COMPLETE STREETS PROJECT REVIEW CHECKLIST

For Building or Zoning Permits, complete all questions. For City Plan Actions, complete questions 1-5, 7, 10-11, 14-21, 31, 39-41, 48, 50, and 52. For Right-of-Way Unit review (e.g., street closure or opening, curb and footway permits) complete questions 1-5, 10-11, and 14-21.

GENERAL PROJECT INFORMATION

1. Project Name _____ 2. Design Completion (%) _____
3. Project Area (precise street limits and scope)
4. Project Description
5. Dates Started/Anticipated to Start: Planning __/__/____ Preliminary Design __/__/____ Final Design __/__/____ Construction __/__/____
6. Street Type: Identify the classification of impacted streets using the maps in Section 3.



PEDESTRIAN COMPONENT (SEE HANDBOOK SECTION 4.3)

Does the proposed design:

- | | | |
|---|------------------------------|-----------------------------|
| 7. Create an attractive pedestrian environment that provides safe access for all pedestrians? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 8. Minimize vehicle intrusions into the pedestrian zone (e.g., driveways, lay-by lanes)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 9. Provide direct pedestrian routes between destinations and crossing opportunities every 300-500'? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 10. Provide minimum sidewalk widths for the street type (see Section 4.3.1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 11. Maintain minimum clear widths for the street type (see Section 4.3.2)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 12. Provide ADA compliant curb ramps where required and/or appropriate (see Section 4.3.3)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



BUILDING & FURNISHING COMPONENT (SEE HANDBOOK SECTION 4.4)

Do building and furnishing components of the proposed design:

- | | | |
|--|------------------------------|-----------------------------|
| 13. Enhance the pedestrian environment? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 14. Avoid tripping hazards and pinch points? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

- | | | |
|--|------------------------------|-----------------------------|
| 15. Maintain adequate visibility for all roadway users at intersections? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 16. Incorporate green infrastructure opportunities wherever practicable? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 17. Consider above and underground utility locations and potential complications? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 18. Provide minimum building zone widths for the street type, if applicable (see Section 4.4.1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 19. Provide minimum furnishing widths for the street type (see Section 4.4.2)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 20. Incorporate other required building & furnishing zone design treatments for the street type (See Table 1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 21. Incorporate other “high priority” building & furnishing zone design treatments for the street type, where width permits (See Table 1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



BICYCLE COMPONENT (SEE HANDBOOK SECTION 4.5)

Do bicycle facilities in the proposed design:

- | | | |
|---|------------------------------|-----------------------------|
| 22. Connect to local bicycle and transit networks? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 23. Incorporate bicycle network recommendations of the Pedestrian and Bicycle Plan? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 24. Provide convenient connections to residences, work places, and other destinations? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 25. Maximize the comfort and safety of bicycling as a transportation option? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 26. Incorporate other “high priority” bicycle design treatments for the street type, where width permits (See Table 1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



CURBSIDE MANAGEMENT COMPONENT (SEE HANDBOOK SECTION 4.6)

Do curbside facilities in the proposed design:

- | | | |
|---|------------------------------|-----------------------------|
| 27. Limit conflicts between modes and provide a buffer between traffic and pedestrians? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 28. Increase the comfort and attractiveness of transit? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 29. Connect transit stops to the surrounding pedestrian network and destinations? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 30. Incorporate alternative uses for underutilized parking lanes, where appropriate (see Section 4.6.6)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 31. Avoid lay-by lanes and other vehicle intrusions into the sidewalk? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 32. Incorporate other “high priority” curbside management design treatments for the street type, where width permits (See Table 1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



URBAN DESIGN COMPONENT (SEE HANDBOOK SECTION 4.8)

Does the urban design component of the proposed design:

- | | | |
|--|------------------------------|-----------------------------|
| 33. Encourage windows, storefronts, and other active uses facing the street? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 34. Use pedestrian-scale design elements (e.g., lighting, setbacks)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 35. Manage driveway access to reduce pedestrian/bicycle conflicts with vehicles (see Section 4.8.1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 36. Incorporate appropriate stormwater management and drainage features (see Section 4.8.4)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



VEHICLE/CARTWAY COMPONENT (SEE HANDBOOK SECTION 4.7)

Does the vehicle/cartway component of the proposed design:

- | | | |
|---|------------------------------|-----------------------------|
| 37. Balance vehicle mobility with the mobility and access needs of other roadway users? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 38. Promote speeds that are appropriate for the street type and surrounding context? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 39. Minimize roadway width while maintaining multimodal transportation access and amenities? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 40. Maintain emergency vehicle access? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 41. Maintain freight and/or transit vehicle access, if appropriate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 42. Support multiple alternative routes to and from destinations? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 43. Connect and extend the street grid, where new roads are being developed? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 44. Incorporate appropriate lane widths for the street type (see Table 1 and Section 4.7.1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 45. Incorporate other "high priority" cartway/vehicle design treatments for the street type, where width permits (See Table 1)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



INTERSECTIONS & CROSSINGS COMPONENT (SEE HANDBOOK SECTION 4.9)

Does the proposed design of intersections and crossing treatments:

- | | | |
|---|------------------------------|-----------------------------|
| 46. Reduce conflicts between modes and promote pedestrian and bicycle safety and comfort? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 47. Include accessible features such as ADA compliant curb ramps? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 48. Provide adequate clearance time for pedestrians to cross streets? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 49. Minimize signal cycle length to reduce pedestrian wait time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 50. Minimize pedestrian crossing distances by narrowing streets or travel lanes, extending curbs, reducing curb radii, or using medians or refuge islands to break up long crossings? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 51. Reduce vehicle speeds and increase visibility at intersections? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 52. Simplify complex intersections, where possible (e.g., convert skewed intersections to right angles)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 53. Incorporate "high priority" intersection and crossing design treatments for the intersection type, where geometry permits (See Table 2)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

IF THE ANSWER TO ANY OF THE QUESTIONS ABOVE IS "NO", PROVIDE A BRIEF EXPLANATION WHY EACH CRITERION IS NOT MET.

5.2 PARKING CURB DEFINITION AND ENFORCEMENT

Definition. “Parking Curb”- On street segments that are designated by regulation of the Philadelphia Department of Streets, a painted and/or delineated edge which separates a bicycle facility from a 7-foot or 8-foot parking lane shall be defined as the parking curb. This parking curb exists solely to establish the physical position of legal parking for the enforcement of parking regulations as established in the Pennsylvania Motor Vehicle Code (75 Pa.C.S. 3354) and the Philadelphia Municipal Code (12-914.54). The parking curb does not alter or confer any rights or responsibilities with respect to maintenance requirements, property

boundaries or city plan limits. The parking curb does not alter the regulation of legal parking with respect to the distance from driveways or intersections or on the basis of any other legal regulations. The location of the parking curb is established by the approved design plans maintained by the Philadelphia Streets Department.

Parking Curbs are designated on:

Ryan Avenue (North Side) from Rowland Avenue to Sandyford Avenue
Chestnut Street (North Side) from 33rd Street to 45th Street

