

On-Street Bicycle Facility Design Treatments

11/10/2017

Note: Page numbers refer to printed version of design guideline.

	Roadside Design Guide (2011)	A Policy on Geometric Design of Highways and Streets (2011)	Guide for the Development of Bicycle Facilities (2012)	Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004)	Manual on Uniform Traffic Control Devices (2012)	Separated Bike Lane Planning and Design Guide (2015)	Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians (2017)	Designing Walkable Urban Thoroughfares (2010)	Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges (2014)	Traffic Control Devices Handbook (2013)	Urban Bikeway Design Guide (2014)	Urban Street Design Guide (2013)	Transit Street Design Guide (2016)	Draft Guidelines: PROWAG, Shared Use Path Guidelines (as of 2014)
	AASHTO	AASHTO	AASHTO	AASHTO	FHWA	FHWA	FHWA	ITE/CNU	ITE	ITE	NACTO	NACTO	NACTO	US Access Board
A. Bicycle Facility Selection														
A1	Guidance of appropriate use/ typical application of bicycle facilities		Section 2.5.2	N/A		Ch 3, Ch 4, Pages 133-143	N/A	N/A		Page 571-572	Throughout entire document	N/A	Ch 2, Ch 5, Pages 186-187	
B. General Roadway Design														
B1		Sections 2.7, 4.4	Section 4.5							Pages 598-600				
B2			Section 2.5.3		Sections 9B.20, 9B.21	Page 127				Page 578	Page 139			
B3			Section 4.4		Section 9C.07	Pages 129-130				Pages 588-596	Page 133		Pages 122-123	
B4			Section 4.3		Sections 9B.06, 9B.19, 9B.20	Page 128				Pages 597-598				
B5			Section 4.10							Pages 586-587	Pages 149-214	N/A		N/A
B6			Sections 4.12.6, 4.12.7	N/A			N/A	N/A			Pages 167-214			
B7		Sections 4.10.3, 4.16.4	Section 4.12.3		Section 9B.19									
B8			Section 4.12.1		Section 9B.19					Pages 595-596, 613				
B9		Section 2.7, 4.7.2	Section 4.12.8							Page 597				
B10		Section 4.5	Section 4.5.2							Pages 600-601				
B11			Section 4.7.2		Interim approval (April 2011)	Page 114				Pages 583-584, 616	Page 119			
C. Bicycle Lanes														
C1			Section 4.7		Sections 9B.04, 9C.04	Pages 127-130				Pages 603-604	Page 3			
C2	Section 10.2.1.7	Section 2.7, 4.3	Section 4.6		Section 9C.04	Pages 77-82				Pages 601-606	Page 3			
C3			Section 4.6.3			Pages 77, 78, 80				Page 602	Page 21		Pages 43-55	
C4			Section 4.9											
C5			Section 4.7	N/A	Section 3D.02		N/A	N/A		Pages 605-606	Page 9	N/A	Page 26	N/A
C6			Section 4.6.3							Pages 612-613	Page 15			
C7			Section 4.6.5		Section 9C.04	Pages 97-98				Pages 604-605	Page 3			
C8					Experimental status (2014)									
C9														
C10					Figure 9C-6	Pages 92-96							Pages 73-77, 79, 81	
D. Separated Bicycle Lanes														
D1	Section 5.2.3	Section 7.3.9	Section 5.2.2			Page 131				Pages 613-623				
D2	Sections 5.2.3, 10.2.1.7			N/A	Section 9C.04	Pages 77-79	N/A	N/A		Pages 605-606	Pages 29, 35	N/A		N/A
D3	Sections 5.2.3, 10.2.1.7				Section 9C.04	Pages 80-82				Pages 605-606	Page 41			
D4						Pages 92-96					Page 32		Pages 73-77, 79, 81	
E. Intersection Design														
E1			Section 4.12.5		Sections 9B.13, 9C.05	Page 116				Pages 624-625	Page 99			
E2		Section 7.3.9			Section 9D.02	Pages 104, 115-121				Pages 625-628	Page 97		Page 151	
E3	Section 4.6				Interim approval (2013)	Pages 115-121				Pages 628-629	Page 93			
E4					Section 9B.11					Pages 624	Page 96			
E5		Section 9.11.3	Section 4.8	N/A	Figures 9C-1, 9C-4, 9C-5, 9C-6	Pages 104-112	N/A	N/A		Pages 606-610	Page 73	N/A	Page 160, 164	N/A
E6					Section 9C.07	Pages 105-108					Page 79			
E7					Interim approval (2016)	Pages 122-125					Page 49			
E8					Section 3B.08	Pages 113-114					Page 55			
E9					Interim approval (2017)						Page 61			
E10						Pages 104-112					Page 85		Page 160	
E11		Section 9.3.4	Section 4.12.11		Section 9C.04					Pages 611-612				
E12 Bicycle Lanes and Interchanges														
E12.1				N/A			N/A	N/A	Page 10			N/A		N/A
E12.2			Section 4.12.10						Pages 9-16	Pages 610-611				
E12.3			Section 4.12.10						Page 17-21	Pages 610-611				
E12.4			Section 4.12.10						Page 23-25					

Shared Use Path Design Treatments

9/7/2018

Note: Page numbers refer to printed version of design guideline.

	Roadside Design Guide (2011)	A Policy on Geometric Design of Highways and Streets (2011)	Guide for the Development of Bicycle Facilities (2012)	Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004)	Manual on Uniform Traffic Control Devices (2012)	Separated Bike Lane Planning and Design Guide (2015)	Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians (2017)	Designing Walkable Urban Thoroughfares (2010)	Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges (2014)	Traffic Control Devices Handbook (2013)	Urban Bikeway Design Guide (2014)	Urban Street Design Guide (2013)	Transit Street Design Guide (2016)	Draft Guidelines: PROWAG, Shared Use Path Guidelines (as of 2014)
	AASHTO	AASHTO	AASHTO	AASHTO	FHWA	FHWA	FHWA	ITE/CNU	ITE	ITE	NACTO	NACTO	NACTO	US Access Board
A. General Shared Use Path Design														
A1			Section 5.2.1	Section 3.2.14						Page 614				R302.3.2
A2			Section 5.2.1	Section 3.2.14										R302.3
A3			Section 5.2.1	Section 3.2.14										
A4	Section 5.2.3	Section 4.10.3	Section 5.2.1											
A5		Section 2.7, 4.15.2	Section 5.2.2							Page 614-616				
A6			Section 5.2.1											
A7			Section 5.2.3											
A8		Section 2.7	Section 5.2.4											
A9		Section 2.7	Section 5.2.5			N/A	N/A						N/A	
A10			Section 5.2.6	Section 3.2.14										
A11		Section 2.7	Section 5.2.7	Section 3.2.14										R302.6
A12			Section 5.2.9											R302.5
A13		Section 4.10.3, 4.16.4	Section 5.2.10	Section 3.5.3										R302.7
A14			Section 5.2.11											
A15		Section 3.6.3	Section 5.2.12	Section 3.5.4										
A16		Section 2.7	Section 5.2.5											
A17		Section 2.7	Section 5.2.8											
A18		Section 5.2.6			Chapter 8D					Page 623				
B. Intersection Design														
B1	Section 5.2.3		Section 5.3.4							Page 614-616				
B2			Section 5.3.5											
B3		Section 4.17.3	Section 5.3.5	Section 3.3.5										R304.5.1.2
B4			Section 5.3.5											
B5			Section 5.3.5											
B6		Section 4.17.3	Section 5.3.5	Section 3.4.1		N/A	N/A	Pages 156-157				Page 116-117	N/A	
B7			Section 5.3.6											
B8			Section 5.3.6	Section 2.6, 3.4.2				Pages 111 - 112, 184-187, 195-197				Page 45-47		
B9			Section 5.3.6					Page 9-21				Page 54, 114-115		
B10				Section 3.4.2				Page 8						
B11 Midblock Crossings														
B11.1			Section 5.3.2	Section 3.4.1	Figure 9B-7			Pages 150-155						R302.6.2
B11.2			Section 5.3.2		Section 9B.03									
B11.3			Section 5.3.2			N/A	N/A							
B11.4			Section 5.3.2											
C. Signals, Signs and Markings Related to Shared Use Paths														
C1 Signals														
C1.1			Section 5.4.3	Section 4.1.2						Pages 553-554, 381-382,				
C1.2			Section 5.4.3		Sections 4E.08, 4E.09, 9B.13, 9C.05					Pages 214-215, 402, 553, 624-625				
C1.3			Section 5.4.3		Section 4F	N/A	N/A		Page 7	Page 556-558, 225-226, 338	Page 111-116		N/A	
C1.4					Interim approval 21 (2016)				Page 8	Page 560, 226	Page 105-110			
C1.5	Section 4.6			Section 4.1.4, 4.1.6	Section 4E					Page 551, 553, 334-338, 412		Page 110-111		
C1.6					Interim approval (2013)					Page 628-629	Page 93-98			
C1.7					Section 4F.02					Page 628-629				
C2 Signs														
C2.1			Section 5.4.2		Section 9B.01									
C2.2			Section 5.4.2		Section 9B.02									
C2.3	Section 4.3.3		Section 5.4.2		Section 9B.01	N/A	N/A			Page 617			N/A	
C2.4			Section 5.4.2		Section 2C.49					Page 617-621				
C3 Pavement Markings on Shared Use Path														
C3.1			Section 5.4		Section 3B.20, 9C.03					Page 621-623				
C3.2			Section 5.4.1							Page 622				
C3.3			Section 5.4.1		Section 9C.03					Page 621				
C3.4			Section 5.4.1							Page 621-622				
C3.5			Section 5.4.1		Figure 9C-8	N/A	N/A			Page 623			N/A	
C3.6			Section 5.4.1											
C3.7			Section 5.4.1											
C3.8			Section 5.4.1		Section 3B.16				Page 7					

Pedestrian Facility Design Treatments

09/7/2018

Note: Page numbers refer to printed version of design guideline.

	Roadside Design Guide (2011)	A Policy on Geometric Design of Highways and Streets (2011)	Guide for the Development of Bicycle Facilities (2012)	Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004)	Manual on Uniform Traffic Control Devices (2012)	Separated Bike Lane Planning and Design Guide (2015)	Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians (2017)	Designing Walkable Urban Thoroughfares (2010)	Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges (2014)	Traffic Control Devices Handbook (2013)	Urban Bikeway Design Guide (2014)	Urban Street Design Guide (2013)	Transit Street Design Guide (2016)	Draft Guidelines: PROWAG, Shared Use Path Guidelines (as of 2014)
	AASHTO	AASHTO	AASHTO	AASHTO	FHWA	FHWA	FHWA	ITE/CNU	ITE	ITE	NACTO	NACTO	NACTO	US Access Board
A. General Roadway														
A1 Paved shoulders		Section 4.4		Section 3.2.2								Page 41		
A2 Pedestrian accommodations on bridges/tunnels		Sections 4.10.3, 4.17.1, 4.17.2		Section 3.2.9										R302.3, R302.5, R408
A3 Driveway management and design		Sections 2.6.6, 4.15.2		Section 3.2.6				Pages 125-126		Page 640				
A4 Medians		Section 4.1.1		Section 3.3.2, 3.4.1	Section 3i			Pages 138-140		Pages 539-540		Page 116	Chapter 2	R302.3.1, R305.2.4
A5 On-street parking design		Section 4.20		Section 2.6.2				Pages 145-148				Pages 40-41	Chapter 2	R309
A6 Lighting and illumination		Section 3.6.3		Sections 3.2.11, 3.3.6				Page 168 and throughout				Pages 26-30	Pages 44-45	
A7 Shared streets				Section 3.2.13			Chapter 8					Pages 33-36		
A8 Travel lane width		Section 4.3	N/A	Section 2.6				Pages 136-138				Pages 33-36		
A9 Lane narrowing				Section 2.6		N/A				Page 217	N/A	Pages 5-15, 33-36		
A10 Lane reduction				Section 2.6.2				Pages 149 - 150				Pages 49, 142		
A11 Chicanes				Section 2.6.2	Sections 2C.29, 3B.25, 3B.26					Pages 202-203		Pages 51-56, 142		
A12 Speed humps, tables, and cushions				Section 2.6.1								Page 142		
A13 Diverters				Section 3.1.4, 3.3.5								Pages 121-124		
A14 Sight distance and sight lines		Section 3.2		Section 3.2.12	Sections 8C.01, 8C.02, 8C.03, 8C.10, 8C.11, 8C.13					Pages 545, 208-214, 463, 471-472				R302.7.4, R305.2.5, R208
A15 Railroad grade crossings				Section 3.3.5	Section 3B.18 (Line 18)					Pages 212-214		Page 113		R208, R304, R305, R407
A16 Curb ramps		Section 4.17.3												
A17 Sidewalks														
A17.1 Surface treatments				Section 3.2.10, 3.3.4										R302.7
A17.2 Buffer zones	Sections 10.2.1.6, 10.2.2	Section 4.17.1		Sections 3.2.4, 3.2.13				Chapter 8				Pages 38-44		
A17.3 Obstacles and protruding objects	Section 10.2.2.2			Section 3.2.12				Pages 122, 126				Pages 38-44		R210, R402, R404
A17.4 Maintenance				Section 4.3				Pages 171-172 (snow removal)		Pages 185-188, 504				
A17.5 Maintenance of facility during construction			N/A	Section 4.4	Section 6D.01	N/A				Pages 561-562	N/A	Page 41		R205
A17.6 ADA compliant access routes				Section 3.2										R302, R204
A17.7 Grade and cross slope				Section 3.2.7										R302.5, R302.6
A17.8 Sidewalk widths and geometry		Section 4.17.1		Section 3.2.3						Page 504		Pages 38-44		R302.3
A17.9 Stairs				Section 3.2.8										R408, R409
A18 Pedestrians and transit														
A18.1 Siting bus stops		Section 4.19						Pages 163-165, 200				Pages 60-64	Entire guide	R308
A18.2 Bus bulbs and boarding islands								Pages 200-202				Pages 8-13, 45-47, 50, 58-59, 62-63	Page 24, 25, 73, 74, 82, 83, 119	
A18.3 Pedestrian accommodations at median transit			N/A					Page 141 (Table 9.1)				Pages 22-23, 60	Pages 38-41, 84-87	R208, R308, R408
A18.4 Transit stop improvements												Pages 22-23, 62-64	Ch. 3, Ch. 4, Pages 184-185	R208, R308, R308.2, R404
A18.5 Transit stop design		Section 4.19		Section 3.2.5								Pages 62-64	Ch. 3, Ch. 4, Pages 184-185	
B. Intersections and Crossing Locations														
B1 Raised crossings				Section 3.4.2					Page 7			Pages 98, 115		
B2 Curb extensions (bulb outs)				Sections 2.6.2, 3.3.2				Pages 195-197				Pages 45-50	Chapter 2	R304, R305
B3 Corner radii				Section 3.3.1				Pages 184-187				Pages 117-120	Page 170-172	
B4 Crossing islands				Sections 3.3.2, 3.4.1				Pages 156-157				Page 116	Chapter 2	R208, R302.3.1, R305.2.4
B5 Pedestrian design treatments at roundabouts				Section 3.3.3	Sections 2B.45, 3C.05	N/A		Pages 190-192						R306.3
B6 Pedestrian accommodation at complex interchanges/intersections				Section 3.3.3					Page 9-25			Pages 100-106		
B7 Traffic circles		Section 9.3.4		Section 2.6.2								Page 99		R302.3, R302.5, R408
B8 Overpasses/underpasses	Section 7.7.2.3	Section 4.17.2		Section 3.5										
B9 Right-turn slip-lane design				Section 3.3.3				Pages 187-189	Page 5				Page 160	
B10 Skewed Intersections				Section 3.2.12								Pages 100-106		
B13 Marked crosswalks and enhancements														
B13.1 Striping				Section 3.3.4	Section 3B.18			Pages 193-195	Page 4	Pages 521-522, 540-543		Pages 110-113		
B13.2 Signing at crosswalks				Section 4.2	Sections 2B.11, 2B.12				Page 4	Pages 522-524				
B13.3 Advance yield/stop lines at uncontrolled locations			N/A	Section 3.3.4	Section 3B.16				Page 7	Pages 543-544		Page 113		
B13.4 Advance stop lines at traffic signals				Section 3.3.4	Section 3B.16							Page 113		
B13.5 Other crosswalk features										Pages 640-645, 541-543		Pages 109-116		
B14 Signalization														
B14.1 Pedestrian detection				Section 4.1.4	Sections 4E.08, 4E.09					Pages 214-215, 402, 553		Pages 132-133		R209
B14.2 Signal timing for pedestrians				Sections 4.1.2, 4.1.6	Section 4E.06					Pages 553-554, 381-382		Pages 130-131		R306.2
B14.3 Pedestrian signalheads	Section 4.6			Section 4E	Section 4E					Pages 551-553, 334-338, 412				R209
B14.4 Leading pedestrian intervals				Section 4.1.1	Section 4E.06					Page 359		Page 128-129		
B14.5 Exclusive pedestrian phase			N/A	Section 4.1.1	Sections 4E.09 (line 3), 4E.11 (line 9)					Page 359				
B14.6 Pedestrian Hybrid Beacon (HAWK Signal)					Section 4F				Page 7	Pages 556-558, 225-226, 338				
B14.7 Rectangular Rapid-Flashing Beacon (RRFB)					Interim approval 21 (2018)				Page 8	Pages 560, 226				
B14.8 Warrants				Section 4.1.3	Sections 4E.09-4E.13				Page 7					
B14.9 Accessibility				Section 4.1.4						Pages 546-549				R403, R404, R406, R209
B15 Pedestrian related signs														
B15.1 Sign location and assembly	Section 4.3.3				Section 2A									R402
B15.2 Sign sizing			N/A		Sections 2A.06, 2B.13, 2C.04									R410, R211
B15.3 Sign types				Section 4.2.1, 4.2.2	Section 2A.05									
B15.4 Wayfinding				Section 4.2.3, 4.2.4										R410, R211
B16 School Areas														
B16.1 Pavement markings				Section 3.3.4, 4.2.2	Section 7C									
B16.2 Crosswalks					Sections 7B.11, 7B.12, 7C					Pages 520-522				
B16.3 School-related signs			N/A	Section 4.2.2	Section 7B					Pages 224-226, 512-525				
B16.4 Signals					Section 4C.06					Pages 525-526				
B16.5 Speed limits				Section 2.5.4	Sections 7B.15, 7B.16					Pages 508-512				
B16.6 Crossing guards				Section 2.5.4										
B17 Midblock Crossings														

Pedestrian Facility Design Treatments

09/7/2018

Note: Page numbers refer to printed version of design guideline.

	Roadside Design Guide (2011) AASHTO	A Policy on Geometric Design of Highways and Streets (2011) AASHTO	Guide for the Development of Bicycle Facilities (2012) AASHTO	Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004) AASHTO	Manual on Uniform Traffic Control Devices (2012) FHWA	Separated Bike Lane Planning and Design Guide (2015) FHWA	Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians (2017) FHWA	Designing Walkable Urban Thoroughfares (2010) ITE/CNU	Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges (2014) ITE	Traffic Control Devices Handbook (2013) ITE	Urban Bikeway Design Guide (2014) NACTO	Urban Street Design Guide (2013) NACTO	Transit Street Design Guide (2016) NACTO	Draft Guidelines: PROWAG, Shared Use Path Guidelines (as of 2014) US Access Board
B17.1 Crossing distance considerations				Section 3.4.1										
B17.2 Signs and pavement markings			N/A	Section 3.4.1	Sections 3B.16, 3B.18, 2B.11, 2B.12	N/A		Pages 150-155			N/A	Pages 114-115		
B17.3 Traffic calming				Section 3.4.2								Pages 114-116		
B17.4 Signals				Section 3.4.3								Pages 114-117		
												Pages 114-118		

Title	Sponsoring Agency	Date	Edition
Design Guidelines			
Manual on Uniform Traffic Control Devices	FHWA	2009 (Revision 1 and 2, May 2012)	-
Separated Bike Lane Planning and Design Guide	FHWA	2015	1st
Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians	FHWA	2017	1st
Proposed Guidelines for Public Rights-of-Way	U.S. Access Board	2011	1st
A Policy on Geometric Design of Highways and Streets	AASHTO	2011	6th
Guide for the Development of Bicycle Facilities	AASHTO	2012	4th
Guide for the Planning, Design, and Operation of Pedestrian Facilities	AASHTO	2004	1st
Urban Bikeway Design Guide	NACTO	2014	2nd
Designing Walkable Urban Thoroughfares: A Context Sensitive Approach	ITE & CNU	2010	1st
Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges	ITE	2014	1st
Urban Street Design Guide	NACTO	2013	1st
Transit Street Design Guide	NACTO	2016	1st
Traffic Control Devices Handbook	ITE	2013	2nd
Roadside Design Guide	AASHTO	2011	4th
Resources			
School Site Planning, Design and Transportation	ITE	2013	1st
Highway Safety Manual	AASHTO	2010	1st
Urban Street Geometric Design Handbook	ITE	2008	-
PedSafe	FHWA	2013	2nd
BikeSafe	FHWA	2014	2nd
Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts	FHWA	2016	1st
Small Town and Rural Multimodal Networks	FHWA	2016	1st
Pathways to Transit	ITE	2008	1st
Highway Capacity Manual	TRB	2010	-
A Residents Guide to Walkable Communities	FHWA	2008	1st
Separated Bikeways	ITE	2013	1st
Transportation Planning Handbook	ITE	2009	3rd
Standards for Outdoor Developed Areas	U.S. Access Board	2013	1st
APBP Bicycle Parking Guidelines	APBP	2010	2nd