



GUIDE FOR GEOMETRIC DESIGN OF TRANSIT FACILITIES ON HIGHWAYS AND STREETS

July 2014

AMERICAN ASSOCIATION OF
STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHTO
THE VOICE OF TRANSPORTATION



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CONTENTS

CHAPTER 1 INTRODUCTION

1.1 PURPOSE AND SCOPE	1-2
1.2 AUDIENCE	1-2
1.3 ORGANIZATION OF GUIDELINES	1-2
1.4 USING THE GUIDE	1-3
1.5 REFERENCES	1-3

CHAPTER 2 PLANNING AND DECISION-MAKING

2.1 REGIONAL AND CORRIDOR PLANNING PROCESSES	2-2
2.2 INTEGRATING TRANSIT PROJECTS INTO ROADWAY PLANNING PROCESSES	2-12
2.3 SUMMARY	2-14
2.4 REFERENCES	2-15

CHAPTER 3 DESIGN PARAMETERS AND CONTROLS

3.1 TRANSIT VEHICLE CHARACTERISTICS AND CONTROLS	3-1
3.2 ROADWAY DESIGN CONTROLS AND CRITERIA	3-17
3.3 TRANSIT QUALITY OF SERVICE AND CAPACITY CONSIDERATIONS	3-23
3.4 TRANSIT OPERATIONS AND INFRASTRUCTURE	3-31
3.5 REFERENCES	3-33

CHAPTER 4 BUS FACILITIES ON LIMITED ACCESS HIGHWAYS

4.1 GENERAL PLANNING AND DESIGN CONSIDERATIONS	4-2
4.2 TREATMENTS	4-5
4.3 OPERATIONAL REQUIREMENTS	4-40
4.4 PROTECTING FUTURE NEEDS	4-49
4.5 REFERENCES	4-51

CHAPTER 5 GUIDELINES FOR BUS FACILITIES ON STREETS AND ROADWAYS

5.1 GENERAL PLANNING AND DESIGN CONSIDERATIONS	5-2
5.2 BUS STOP LOCATIONS AND DESIGN	5-9

5.3	BUS OPERATION IN SHARED LANES (MIXED TRAFFIC)	5-31
5.4	PRIORITY FACILITIES—PLANNING AND DESIGN	5-41
5.5	PRIORITY LANES	5-48
5.6	MEDIAN BUSWAYS AND STREETS	5-73
5.7	ENFORCEMENT	5-80
5.8	ITS DESIGN DETAILS	5-81
5.9	REFERENCES	5-88

CHAPTER 6 LIGHT RAIL AND STREETCAR FACILITIES ON STREETS AND HIGHWAYS

6.1	HISTORICAL CONTEXT	6-1
6.2	GENERAL PLANNING AND DESIGN GUIDELINES	6-4
6.3	GEOMETRIC DESIGN FEATURES	6-19
6.4	STOP AND STATION DESIGN	6-27
6.5	TRAFFIC CONTROLS	6-37
6.6	LRT/BUS LANE ENFORCEMENT	6-48
6.7	REFERENCES	6-49

CHAPTER 7 PEDESTRIAN AND BICYCLE ACCESS

7.1	PEDESTRIAN ACCESS	7-1
7.2	BICYCLE ACCESS	7-20
7.3	PASSENGER AMENITY/AESTHETIC CONSIDERATIONS	7-23
7.4	REFERENCES	7-24

APPENDICES

A	GLOSSARY	A-1
----------	---------------------------	-----

B	BIBLIOGRAPHY	B-1
----------	-------------------------------	-----

C BUS VEHICLE CHARACTERISTICS

C.1	DESIGN VEHICLE GUIDANCE	C-1
C.2	MINIMUM TURNING PATHS OF DESIGN VEHICLES	C-2
C.3	REFERENCES	C-12

D BUSWAYS

D.1 DESIGN APPROACH	D-1
D.2 BUSWAY GEOMETRY	D-5
D.3 BUSWAY DESIGN	D-16
D.4 ADDITIONAL FIGURES FOR BUSWAYS	D-28
D.5 REFERENCES	D-35

E OFF-LINE TRANSIT FACILITIES

E.1 PLANNING AND DESIGN CONSIDERATIONS	E-1
E.2 PARKING AND ACCESS DESIGN	E-16
E.3 BUS—PASSENGER INTERFACE DESIGN	E-31
E.4 COMMUNITY INTEGRATION	E-49
E.5 REFERENCES	E-57

LIST OF FIGURES

CHAPTER 2 PLANNING AND DECISION-MAKING

Figure 2-1. NEPA Process and Documentation Options	2-7
Figure 2-2. Transportation System Planning Process	2-10
Figure 2-3. Typical Corridor Planning and Project Development Process	2-11
Figure 2-4. Transit Inputs into Typical Roadway Planning and Development Process	2-14

CHAPTER 3 DESIGN PARAMETERS AND CONTROLS

Figure 3-1. Typical 12.2-m (40-ft) Urban Transit Bus	3-2
Figure 3-2. Intercity Bus	3-4
Figure 3-3. Double-Decker Bus	3-4
Figure 3-4. Minimum Turning Path for a Typical Transit Design Vehicle	3-6
Figure 3-5. Example of Bicycle Rack on Standard Bus	3-8
Figure 3-6. Minimum Turning Path for a Typical Bus with Bicycle Rack	3-9
Figure 3-7. Bus Underside Clearance Angles	3-10
Figure 3-8. Mechanical (Raised Curb) Guideway, Essen, Germany	3-10
Figure 3-9. Mechanical (Raised Curb) Guideway, Essen, Germany	3-11
Figure 3-10. Optically Guided CIVIS Bus in Las Vegas, Nevada	3-12
Figure 3-11. Modern Articulated LRV	3-13
Figure 3-12. Dynamic Envelope for a Single LRT Track	3-17
Figure 3-13. Turning Clearance Requirements for Streetcar and LRV	3-18
Figure 3-14. Bus Lane on Freeway Shoulder	3-22
Figure 3-15. Person Capacity Ranges of United States and Canadian Transit Modes	3-26
Figure 3-16. Typical Transit Speed and Capacity Ranges of United States and Canadian Transit Modes	3-27

CHAPTER 4 BUS FACILITIES ON LIMITED ACCESS HIGHWAYS

Figure 4-1. Typical Cross Sections for Concurrent-Flow Buffer Separated Lanes	4-7
Figure 4-2. Typical Cross-Section for Concurrent Flow Right Side Lanes	4-8
Figure 4-3. Typical Cross Sections for Two-Way Barrier-Separated Lanes	4-9

Figure 4-4. Typical Cross Sections for Reversible Lanes.	4-10
Figure 4-5. Typical Cross Sections for Busway or HOV Facility in Separate Rights-of-Way.	4-11
Figure 4-6. Typical Cross Sections for Contraflow Lanes.	4-12
Figure 4-7. Typical Layout for a Bus/HOV Bypass at a Metered Freeway Entrance Ramp	4-13
Figure 4-8. Typical Layout for a Separate Bus/HOV Bypass on a Metered Freeway	4-13
Figure 4-9. Example of a Bus/HOV Drop Ramp	4-14
Figure 4-10. Typical Layouts for Bus/HOV Lane Entrance.	4-15
Figure 4-11. Typical Layouts for Bus/HOV Lane Termination	4-15
Figure 4-12. Typical Layouts of Slip Ramps with Weave Lanes.	4-16
Figure 4-13. Bus Turnouts	4-18
Figure 4-14. Typical Pedestrian Overpasses on Major Highways	4-23
Figure 4-15. Example High-Speed Freeway On-Line Stations.	4-25
Figure 4-16. Choosing a Station Type.	4-27
Figure 4-17. Example of Right-Side, On-Line Station Stop, I-110, Los Angeles, California	4-28
Figure 4-18. Example of Right-Side, On-Line Stop, I-5, Seattle, Washington.	4-29
Figure 4-19. Right-Side Bus Stops at Freeway Level	4-30
Figure 4-20. Right-Side Bus Stops at Freeway Level—Diamond Interchange	4-31
Figure 4-21. Sample of Right-Side Stops	4-32
Figure 4-22. Sample Median-Side Stop, Side Platform with Through Lane.	4-34
Figure 4-23. Sample Median-Side Stop, Side Platform with No Through Lane.	4-35
Figure 4-24. On-Line Station on I-110, Los Angeles, California.	4-35
Figure 4-25. Pedestrian Access on On-Line Station on I-110, Los Angeles, California	4-36
Figure 4-26. Mountlake Terrace Station on I-5, Seattle, Washington	4-36
Figure 4-27. Mountlake Terrace Station on I-5, Seattle, Washington	4-37
Figure 4-28. Sample Median-Side Stop, Center Platform	4-37
Figure 4-29. HOV Direct Access Ramp Serving Bus Transfers at an Intersection	4-38
Figure 4-30. Freeway Interchange Bus Stop Using a Driveway	4-40
Figure 4-31. Freeway Interchange Bus Stop Using a Driveway	4-41
Figure 4-32. Bus Stops at Street Level on Diamond Interchange	4-42
Figure 4-33. Cross Sections of Enforcement Areas on Reversible Lanes	4-45

Figure 4-34. Cross Sections of Enforcement Areas on Concurrent-Flow Buffer-Separated Lanes	4-46
Figure 4-35. Directional and Bi-Directional Enforcement Area Layout	4-47
Figure 4-36. Examples of Regulatory Signs Used with Bus/HOV Facilities	4-48
Figure 4-37. Example of HOV Lane Pavement Marking	4-49

CHAPTER 5 GUIDELINES FOR BUS FACILITIES ON STREETS AND ROADWAYS

Figure 5-1. Density Organized to Benefit from Transit	5-7
Figure 5-2. Density Organized to Benefit from Transit	5-8
Figure 5-3. Transit Route Access to Building	5-9
Figure 5-4. Transit Routes and Subdivision Development	5-10
Figure 5-5. Pedestrian Links to Bus Stops	5-12
Figure 5-6. Typical Bus Stop Zone Dimensions	5-16
Figure 5-7. Far-Side Bus Bulb	5-17
Figure 5-8. Mid-Block Bus Bulb Created by Curb Extension	5-17
Figure 5-9. Bus Bulb with Near-Side Stops	5-19
Figure 5-10. Bus Bulb with Far-Side Stops	5-20
Figure 5-11. Closed Bus Bay	5-21
Figure 5-12. Open Bus Bay	5-22
Figure 5-13. Queue Jump Bus Bay	5-23
Figure 5-14. Half Sawtooth Bus Bay	5-23
Figure 5-15. Typical Bus Bay Dimensions	5-24
Figure 5-16. Partially Open Bus Bay Dimensions	5-25
Figure 5-17. Typical Queue Jump Bus Bay	5-26
Figure 5-18. Luggage Bay Bicycle Rack	5-33
Figure 5-19. Comparison of New Flyer D60 (Articulated Bus) AutoTurn™ Centerline Path vs. Field Observations	5-34
Figure 5-20. Left-Turn Street Controls	5-38
Figure 5-21. Queue Jump Signal	5-40
Figure 5-22. Bus Queue Bypass	5-41
Figure 5-23. Arterial Street Characteristics	5-42
Figure 5-24. Transit Priority Evaluation Process	5-44

Figure 5-25. Typical Suburban Arterial with Bus Bay	5-45
Figure 5-26. Typical CBD Street with Bus Lane	5-46
Figure 5-27. A Shoulder Lane Approaching a Signalized Intersection with a Right-Turn Lane.	5-50
Figure 5-28. Right Curb Bus (HOV) Lane, Toronto	5-51
Figure 5-29. Stopped Vehicle Obstructing Bus Lane, Toronto	5-51
Figure 5-30. Normal Flow Curb Bus Lane Designs for Two-Way Streets	5-52
Figure 5-31. Bus Lane, Ottawa	5-54
Figure 5-32. Dual Bus Lane Madison Avenue, New York City	5-55
Figure 5-33. Contraflow Bus Lane Options	5-56
Figure 5-34. Spring Street Contraflow Lane (Los Angeles)	5-58
Figure 5-35. Signing and Pavement Markings for Contraflow Bus Lane on Spring Street, Los Angeles.	5-59
Figure 5-36. Photo of Animated Eyes on a Pedestrian Signal Display	5-60
Figure 5-37. Median Contraflow HOV Lane, Honolulu, Hawaii	5-61
Figure 5-38. Exclusive Transit Lane in Median	5-61
Figure 5-39. Contraflow Bus Lane Design	5-62
Figure 5-40. Median Concurrent Flow (Left-Side) Bus Lane, University Circle in Cleveland, Ohio	5-63
Figure 5-41. Curbside Preferential Lane Signs	5-64
Figure 5-42. Overhead Preferential Lane Signs	5-65
Figure 5-43. Intersection Lane Control Signs	5-65
Figure 5-44. Typical Lane Word Marking Layout	5-66
Figure 5-45. Bus Lane Pavement Marking— New York City	5-67
Figure 5-46. Bus Lane Pavement Marking—Australia.	5-67
Figure 5-47. Typical Markings for Preferential Lanes	5-68
Figure 5-48. Red Curb Line for Bus Lane, New York	5-69
Figure 5-49. Examples of Bus-Only Turn Lanes	5-71
Figure 5-50. Advance Signal and Stop Bar for Bus Left Turns from Right-Lane Bus Stop	5-72
Figure 5-51. Median Busway, Vancouver	5-73
Figure 5-52. Median Arterial Busway Design for a Wide Roadway	5-77
Figure 5-53. Typical Median Arterial Busway Design with Left Turns	5-77
Figure 5-54. Typical Median Arterial Busway Design Without Left Turns	5-78

Figure 5-55. Typical Bus Street Designs	5-79
Figure 5-56. Real-Time Passenger Information	5-87

CHAPTER 6 LIGHT RAIL AND STREETCAR FACILITIES ON STREETS AND HIGHWAYS

Figure 6-1. Street Running Interurban, Indiana (1937).	6-2
Figure 6-2. Side Running Streetcar, Indiana (1930s)	6-2
Figure 6-3. Street Loading 63rd Street, Chicago, Illinois (1951).	6-3
Figure 6-4. Safety Island, Irving Park Road, Chicago, Illinois (1944).	6-3
Figure 6-5. Portion of LRT Map Illustrating Split Track Pair, San Jose, California	6-8
Figure 6-6. Streetcar in Mixed-Flow Conditions, Portland, Oregon	6-9
Figure 6-7. Streetcar in Median Lane of a Boulevard, New Orleans, Louisiana	6-10
Figure 6-8. LRT Downtown Mall, Houston, Texas	6-11
Figure 6-9. LRT Arterial Operations in Separate Channel, Baltimore, Maryland.	6-11
Figure 6-10. Customers at the West Portal Station, San Francisco	6-12
Figure 6-11. San Diego Trolley Green Line Over State Route 163	6-13
Figure 6-12. LRT Within Freeway Right-of-Way, San Francisco, California	6-13
Figure 6-13. Passenger Information Display in London, England.	6-15
Figure 6-14. Transit Signal.	6-18
Figure 6-15. Station Design and Roadway Travel Lanes Adapted to Available Right-of-Way.	6-25
Figure 6-16. Example of Raised Traffic Delineation.	6-26
Figure 6-17. Example of Landscaped Median Around LRT Tracks	6-26
Figure 6-18. Typical Platform Cross-Sections for Light Rail Stations	6-29
Figure 6-19. Mini-High Platforms	6-31
Figure 6-20. Exclusive LRT Median Station Within a Roadway (High-Platform Station).	6-32
Figure 6-21. Exclusive LRT Side Station Within a Roadway (High-Platform Station).	6-33
Figure 6-22. Typical LRT Station Configurations	6-34
Figure 6-23. Sidewalk Platform Station for LRT in Mixed Traffic.	6-35
Figure 6-24. Center Platform Station in Median for LRT in Mixed Traffic	6-35
Figure 6-25. Platform Station in Median for LRT on Exclusive Right-of-Way.	6-36
Figure 6-26. Far-Side Split Platforms in Median for LRT in Exclusive (Minimum) Right-of-Way	6-36

Figure 6-27. Mid-Block Side Platform Station in Median for LRT in Exclusive Right-of-Way	6-37
Figure 6-28. Mid-Block Side Platform Station in Median for LRT in Exclusive Right-of-Way	6-39
Figure 6-29. Example of LRT Signals	6-40
Figure 6-30. Example of Intersection Design for Median-Running LRT	6-41
Figure 6-31. Example of Intersection Design for Side-Running LRT	6-43
Figure 6-32. LRT Regulatory Signs	6-44
Figure 6-33. Warning Signs and LRT Station Signs	6-45
Figure 6-34. LRT Transit Vehicle Dynamic Envelope	6-46
Figure 6-35. Example of LRT Vehicle Dynamic Envelope Pavement Markings	6-47

CHAPTER 7 PEDESTRIAN AND BICYCLE ACCESS

Figure 7-1. Shortcuts to Access Transit	7-6
Figure 7-2. Pedestrian Crossing That Matches Desire Lines	7-7
Figure 7-3. Sidewalk That Ends Abruptly	7-8
Figure 7-4. Sidewalk Design to Avoid Obstructions	7-8
Figure 7-5. Sidewalk Design to Avoid	7-11
Figure 7-6. Schematic of Accessible Design	7-11
Figure 7-7. Example of Street Narrowing	7-13
Figure 7-8. Curb Extension	7-13
Figure 7-9. Corner Radii and Crossing Distance	7-14
Figure 7-10. Textured Pavement Locating Bus Stops to Discourage Crossing Streets at Undesirable Locations	7-15
Figure 7-11. Example Where Street Crossing Is an Extension of Railroad Crossing	7-15
Figure 7-12. A Combination of a Screen Wall and Evergreen Landscaping Provide Parking Lot Screening	7-17
Figure 7-13. Example of Roadway with Buffering	7-19
Figure 7-14. Example of Utility Pole as Pedestrian Obstacle	7-20
Figure 7-15. Bike Rack Dimensions and Spacing	7-22
Figure 7-16. Attractive Station Area	7-23

APPENDICES

C BUS VEHICLE CHARACTERISTICS

Figure C-1. Vehicle Dimensions Reference Points	C-2
Figure C-2. Minimum Turning Path for a Passenger Car Design Vehicle	C-5
Figure C-3. Minimum Turning Path for a Single Unit Truck Design Vehicle	C-6
Figure C-4. Minimum Turning Path for a 12-M (40-Ft) Intercity Bus Design Vehicle	C-7
Figure C-5. Minimum Turning Path for a 14-M (45-Ft) Intercity Bus Design Vehicle	C-8
Figure C-6. Minimum Turning Path for a City Transit Bus Design Vehicle	C-9
Figure C-7. Minimum Turning Path for an Articulated Bus Design Vehicle	C-10

D BUSWAYS

Figure D-1. Examples of Busways	D-2
Figure D-2. Unguided Busway—Medium-Volume Station	D-11
Figure D-3. Unguided Busway—High-Volume Station	D-12
Figure D-4. Guided Busway—High-Volume Station	D-13
Figure D-5. Unguided Busway—Closed Drainage—Retained/Open Cut	D-18
Figure D-6. Unguided Busway—Open Drainage—Shallow Fill	D-19
Figure D-7. Unguided Busway—Low-Volume Station	D-20
Figure D-8. Guided Busway—Closed Drainage—Shallow Fill	D-21
Figure D-9. Guided Busway—Closed Drainage—Retained Fill	D-21
Figure D-10. Guided Busway—Closed Drainage—Retained Fill	D-22
Figure D-11. Ramp—Closed Drainage—Cut and Fill Sections (Earth)	D-23
Figure D-12. Ramp—Open Drainage—Cut and Fill Sections (Earth)	D-24
Figure D-13. Guided Busway Pedestrian Crossing	D-28
Figure D-14. Ramp Busway—Turning Lane Arrangements	D-29
Figure D-15. Station Platform Clearances	D-29
Figure D-16. Typical Station Platform Layout	D-30
Figure D-17. Unguided Busway Bridge Cross-Section	D-31
Figure D-18. Guided Busway Underground Structure Sections	D-32
Figure D-19. Busway Construction Clearance	D-33

Figure D-20. Busway Overpass Clearances—Future LRT D-33

Figure D-21. Busway Bridge Loadings—Future LRT D-34

Figure D-22. Busway Bridge Deck Special Arrangements—Future LRT D-34

E OFF-LINE TRANSIT FACILITIES

Figure E-1. Park-and-Ride Site-Level Study Process E-4

Figure E-2. Park-and-Ride Lot E-10

Figure E-3. Combined Radial/Circumference Commute Pattern. E-12

Figure E-4. Prototype Park-and-Ride Facilities. E-17

Figure E-5. Common Barriers to Pedestrians and Non-Motorized Access to Be Avoided
or Mitigated E-18

Figure E-6. Wheelchair Loading/Lift Requirements E-20

Figure E-7. Bicycle Accommodation E-21

Figure E-8. Preferred Parking Stall Layout E-26

Figure E-9. Angled Versus 90-Degree Parking E-27

Figure E-10. Examples of Stall Layout—Handicapped Parking E-29

Figure E-11. Bus Loading Area (Berth) Designs E-33

Figure E-12. Sawtooth Bus Bay Design. E-35

Figure E-13. Bus Loop Design E-36

Figure E-14. Bus Loop Application E-37

Figure E-15. Customer Service Booth. E-44

Figure E-16. Mural on Shelter E-55

Figure E-17. Artwork on Canopy. E-56

Figure E-18. Stylized Canopy. E-56

LIST OF TABLES

CHAPTER 3 DESIGN PARAMETERS AND CONTROLS

Table 3-1. Standard Bus Design Characteristics	3-3
Table 3-2. Bus Performance Characteristics	3-4
Table 3-3. Turning Radius for 12.2 m (40 ft.) Bus	3-7
Table 3-4. Minimum Travel Way Designs for 12.2-m (40-ft) Bus	3-7
Table 3-5. Summary of Vehicle Guidance Issues	3-13
Table 3-6. Selected Physical and Performance Characteristics for Streetcars and LRVs	3-14
Table 3-7. Geometric and Right-of-Way Requirements for Light Rail Transit in Street or Center Reservation	3-16
Table 3-8. Examples of Typical Design Speeds for Bus and HOV Facilities Along Freeways	3-19
Table 3-9. Stopping and Decision Sight Distances for Various Design Speeds	3-21
Table 3-10. Recommended Roadway Lane Widths for Transit on Tangent Section	3-21
Table 3-11. Quality of Service Framework	3-23
Table 3-12. Fixed-Route Passenger Load Levels of Service (LOS)	3-24
Table 3-13. Passenger Capacity Characteristics of Typical Transit Vehicles	3-25
Table 3-14. Planning Level Bus Lane Service Volumes	3-28
Table 3-15. Maximum Passenger Service Volumes for Planning Purposes	3-28
Table 3-16. Estimated Maximum Capacity of On-Line Linear Bus Stops	3-29
Table 3-17. Passenger Capacities per Train	3-31

CHAPTER 4 BUS FACILITIES ON LIMITED ACCESS HIGHWAYS

Table 4-1. Types of Preferential Treatments for Buses on Limited Access Highways	4-3
Table 4-2. General Guidelines for Dedicated Lanes for Buses on Limited Access Highways	4-4
Table 4-3. General Guidelines for HOV Lanes on Limited Access Highways	4-5
Table 4-4. OSHA Permissible Noise Exposures	4-24
Table 4-5. Recommended Cross Section Dimensions	4-26
Table 4-6. Attributes of Platform Locations	4-27
Table 4-7. Enforcement Attributes Associated with Different Types of Bus/HOV Facilities	4-43
Table 4-8. Standard Edge Line and Lane Line Markings for Preferential Lanes	4-50

Table 4-9. Width Required for Transit Lane Treatments	4-51
Table 4-10. Width Required for Transit Stations	4-51

CHAPTER 5 GUIDELINES FOR BUS FACILITIES ON STREETS AND ROADWAYS

Table 5-1. Approximate Number of Berths Required—Five Percent Failure	5-13
Table 5-2. Comparative Analysis of Bus Stop Locations	5-15
Table 5-3. Sample Bus Bay Dimensions	5-24
Table 5-4. Advantages and Disadvantages of Various Bus Stop Treatments	5-26
Table 5-5. Levels of Service for Queuing Areas	5-29
Table 5-6. Advantages and Disadvantages of Passenger Amenities at Bus Stop	5-30
Table 5-7. Recommended Corner Radii	5-35
Table 5-8. Minimum Corner Radii to Avoid Encroachment on Opposing Traffic.	5-35
Table 5-9. Applications and Lane Width for Priority Lanes.	5-49
Table 5-10. Intersection Design Issues for Bus Priority Lanes	5-49
Table 5-11. Preferential Lane Longitudinal Markings	5-69
Table 5-12. Relative Effectiveness of Various Busway Separations	5-74
Table 5-13. Transit Signal Priority Benefits.	5-84

CHAPTER 6 LIGHT RAIL AND STREETCAR FACILITIES ON STREETS AND HIGHWAYS

Table 6-1. LRT Alignment Classifications	6-7
Table 6-2. Light Rail Transit Vehicles Design Parameters	6-14
Table 6-3. Light Rail Alignment Options and Design Implications	6-20

CHAPTER 7 PEDESTRIAN AND BICYCLE ACCESS

Table 7-1. Methods to Improve the Walking Environment for Accessibility	7-2
Table 7-2. Methods to Improve the Walking Environment for Activity	7-3
Table 7-3. Methods to Improve the Walking Environment with Amenities	7-3
Table 7-4. Pedestrian Improvements Guide	7-4
Table 7-5. Passenger Amenities Advantages and Disadvantages.	7-24

APPENDICES

C BUS VEHICLE CHARACTERISTICS

Table C-1. Design Vehicle Characteristics—Metric	C-3
Table C-2. Design Vehicle Characteristics—U.S. Customary	C-4
Table C-3. Bus Vehicle Dimensions for High- and Low-Floor Design Vehicles—Metric	C-11
Table C-4. Minimum Turning Radii of Design Vehicles for Low Floor Characteristics	C-11
Table C-5. Bus Vehicle Dimensions for High- and Low-Floor Design Vehicles—U.S. Customary	C-12

D BUSWAYS

Table D-1. Design Speeds	D-6
Table D-2. Stopping Sight Distances	D-7
Table D-3. Recommended Minimum Horizontal Curves	D-7
Table D-4. Bus Clearances	D-15
Table D-5. Busway Geometric Criteria Summary	D-17
Table D-6. Fixed Objects Requiring Protection on Unguided Busways	D-25
Table D-7. Clear Zone Widths for Unguided Busways	D-26
Table D-8. Barrier Requirements for Embankments on Unguided Busways	D-26

E OFF-LINE TRANSIT FACILITIES

Table E-1. Walking Distance Under Normal Conditions	E-18
Table E-2. Accessible Space Standards	E-28
Table E-3. Suggested Planning and Design Guidelines for Park-and-Ride Facilities	E-30

1 Introduction

In This Chapter:

- 1.1 Purpose and Scope
- 1.2 Audience
- 1.3 Organization of Guidelines
- 1.4 Using the Guide
- 1.5 References

Public transportation is important to communities in contemporary America. It provides high passenger capacities in heavily-traveled corridors, and allows high employment concentrations in city centers. It permits compact urban developments that are pedestrian friendly, and helps reinforce urban design objectives. It provides mobility for people that are unable to drive or do not have access to motor vehicles. From an environmental perspective, it has lower emissions and energy consumption on a per-capita basis than personal motor vehicles.

Transit vehicles operate in a wide range of environments—both on-street and off-street. Commuter rail and rapid transit operate in exclusive rights-of-way that are frequently grade-separated from intersecting roadways. However, bus routes on public streets and highways and light rail or streetcar operations may share or intersect with the street environment.

Streets and highways often must accommodate transit vehicles as well as motor vehicles, bicyclists, and pedestrians. Transit provisions are best accomplished when incorporated into all phases of street planning, design, and operation. This is essential especially where agencies at the state, county, and municipal level are required to plan, design, or modify streets and highways to accommodate public transportation vehicles and facilities.

Planning and design guidelines, standards, and practices have evolved over the past decade. These include reports prepared by the American Association of State Highway and Transportation Officials (AASHTO), Transportation Research Board (TRB), and Institute of Transportation Engineers (ITE), and those prepared by individual planning and transit agencies. Most, however, encompass a specific mode, such as bus stops, rapid transit, and light rail transit (LRT) and are sometimes prepared in response to specific agency needs. Even so, there are few comprehensive publications that an agency can use for designing streets and highways that accommodate transit services and facilities. Thus, agencies often must develop their own standards. The absence of

a single reference guide makes it difficult to communicate basic design standards to consultants when contracting out work, especially if the consultant is in a different state than the client. The practitioners' need for a single, comprehensive resource that documents and builds upon past and present experience is the basis for this guide.

1.1 PURPOSE AND SCOPE

This guide provides a single, comprehensive reference of current practice in the geometric design of transit facilities on streets and highways. The facilities covered include:

- Local buses, express buses, and bus rapid transit operating in mixed traffic, bus lanes, and high-occupancy vehicle (HOV) lanes, and bus-only roads within street and freeway environments; and
- Streetcars and LRT running in mixed traffic and transit lanes, and within medians along arterial roadways.

These guidelines are based on a review of relevant AASHTO, TRB, and ITE documents, and of design reports provided by various transit agencies. They incorporate findings from targeted investigations conducted specifically to fill voids in the assembled information.

1.2 AUDIENCE

This guide is written for use by public agencies, practitioners, and developers who need to know basic information about planning, locating, sizing, designing, and implementing transit facilities along roadways. The target audience includes:

- Policy makers;
- Highway planners, engineers, designers;
- Traffic/transportation engineers;
- Transit service planners;
- Urban planners;
- Site planners and engineers; and
- Land developers.

The guide provides clear and uniform guidance for the placement and design of facilities and amenities. Transit and highway agencies can adapt these guidelines to meet their specific needs. Practitioners can apply transit provisions to meet specific needs in their plans.

1.3 ORGANIZATION OF GUIDELINES

Chapter 2 contains planning and decision-making guidelines associated with most transit facilities being developed.