



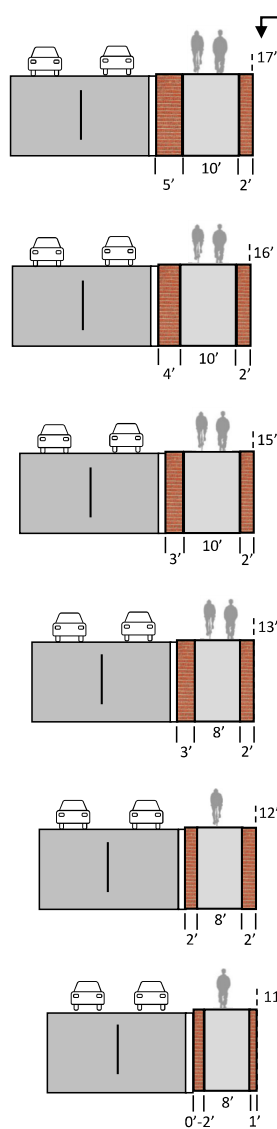
RECOMMENDED BICYCLE AND PEDESTRIAN FACILITIES GUIDELINES

Updated: 3/29/2022

Recommended Bicycle and Pedestrian Facilities

Along I-35 (Curbed)

MOST DESIRABLE
 10ft. SUP is district preferred.
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 ↓
 LEAST DESIRABLE



Available Width
Edge of Pavement to Right of Way (ROW)

Set back Shared Use Path (SUP) and widen to 12 ft. only in high-volume bicycle/pedestrian locations, on a case-by-case basis, and with approval from TxDOT

If pedestrian volumes are expected to be significant, physical separation between pedestrian and cyclists may be considered.



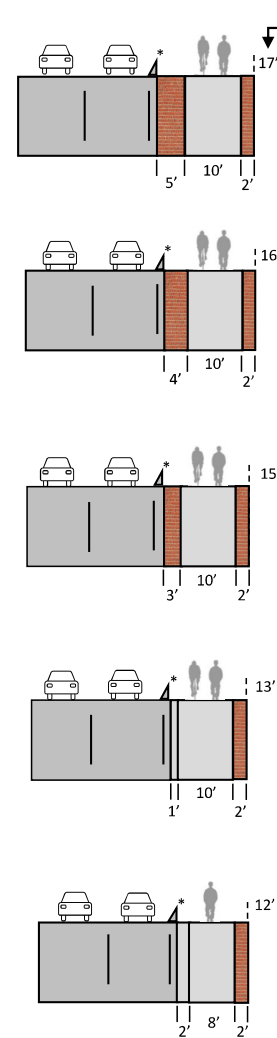
Reducing the path to less than 8 ft. should be done only when all other reasonable alternatives have been exhausted and will require specific TxDOT approval.

For short distances, due to physical or ROW constraints, 6-7 ft. narrowed pathway with buffer can potentially serve as a sufficient bicycle/pedestrian facility. 6 ft. is an absolute minimum.

0'-2' buffer is only for use in extremely constrained conditions.

Recommended Bicycle and Pedestrian Facilities

Along I-35 (Uncurbed)



Available Width
Edge of Pavement to Right of Way (ROW)

Set back Shared Use Path (SUP) and widen to 12 ft. only in high-volume bicycle/pedestrian locations, on a case-by-case basis, and with approval from TxDOT.

Where buffers between shoulders and bicycle/pedestrian lanes are equal to or less than 5 ft., barriers are recommended, but not required.

Reducing the path to less than 8 ft. should be done only when all other reasonable alternatives have been exhausted and will require specific TxDOT approval.

For short distances, due to physical or ROW constraints, an 8 ft. narrowed pathway with buffer can potentially serve as a sufficient bicycle/pedestrian facility.

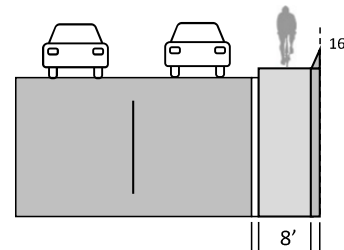
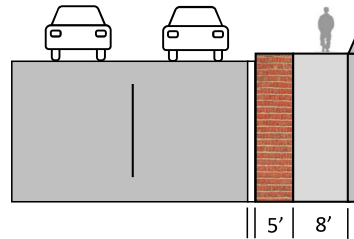
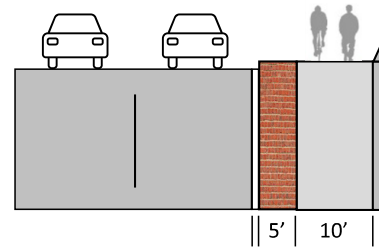
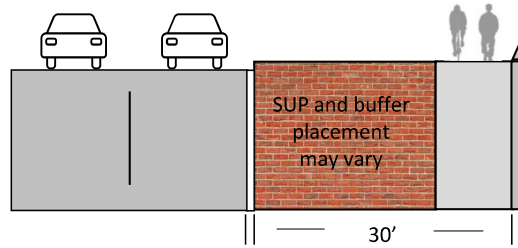
*Potential need for barrier to be evaluated on case-by-case basis.

Notes

1. High-speed roadways are defined as operating at or over 45 MPH. Limited access is defined as limited opportunities for crossing the highway and infrequent driveway conflicts (ex. freeway/frontage roads and major highways).
2. The SUP shall be unobstructed (signs, utilities, etc.) and properly designed, with proper sight distances, driveways, and intersections.
3. Refer to Chapter 5: Design of Shared Use Paths in the AASHTO *Guide for the Development of Bicycle Facilities 2012, Fourth Edition* for additional design guidance including, but not limited to, horizontal alignment, SSD, vertical curves, cross slopes, side slopes, etc.
4. Unless grading needs or utility conflicts will occur, the SUP should be located 2 ft. min. from the ROW.
5. All SUP widths less than 10 feet require a design waiver. All buffer widths less than 5 feet require a design waiver.
6. A SUP width less than 8 feet shall not be used without specific TxDOT approval, as noted above.
7. These are recommended widths, if site conditions permit larger buffer widths may be considered.

Recommended Bicycle and Pedestrian Facilities on I-35 Cross Streets and Pedestrian Bridges

CROSS STREET

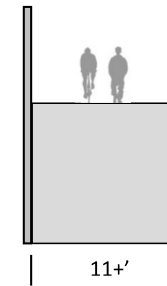


MOST DESIRABLE



LEAST DESIRABLE

PEDESTRIAN BRIDGE**



**Initial mockup of cross section for potential overhead pedestrian bridge

Notes

1. Bike lane width shall be 4 feet minimum, 5 feet desirable, measured from the lane stripe to the lip of gutter (TxDOT RDM).
2. Buffer can be hardscape or landscape based on site conditions. Buffer widths less than 2' shall be hardscape.
3. Bicycle facilities should be avoided on high-speed roadways. High-speed roadways are defined as operating at or over 45 MPH.
4. Refer to AASHTO *Guide for the Development of Bicycle Facilities 2012, Fourth Edition* for additional guidance on design elements including, but not limited to, horizontal alignment, SSD, vertical curves, cross slopes, design speed, and side slopes.
5. The goal of Mobility35 is to provide SUPs for bicycles and pedestrians along all frontage roads, and not provide separate bike lanes. The intent of this guidance for a separated bicycle and pedestrian facilities is only applicable where it is required to tie into an existing bicycle facility. If a SUP is provided, an additional bike lane or shared lane is not needed. If a SUP is not feasible, a bicycle lane is preferred over a shared lane.

DRAFT



BICYCLE, PEDESTRIAN AND SHARED USE PATH FACILITIES

Figures A.8-A.18 are representative of varying bicycle and pedestrian enhancements planned throughout the corridor. Bicycle and pedestrian facility aesthetic treatments apply to retaining walls, ADA handrails and roadway buffers, where necessary. For retaining wall applications along shared use paths, refer to Table A.1. Table A.2 specifies treatments of ADA handrails along sidewalks; refer to TxDOT standard PRD-13 for details. Where pedestrian rails are needed along shared use paths, TxDOT standard type "E" shall be used. Five treatments are proposed where a buffer or gap exists between the roadway and the shared use path. The varying treatments are defined by the distance between the two facilities and whether or not a physical barrier exists. The buffers are described as:

- less than two feet from curb (Fig A.13)
- less than two feet from traffic barrier (Fig A.14)
- two feet up to five feet from curb (Fig A.15)
- two feet up to five feet from curb (Fig A.15)
- two feet up to five feet from traffic barrier (Fig A.16)
- greater than five feet from curb or traffic barrier

Corresponding hardscape figures illustrate the condition, paver laying pattern and color. Where the distance between the edge of the shared use path and back of curb or traffic barrier is greater than five feet, grass seed or sod shall be used. Refer to hardscape aesthetics for treatment under bridges in each city.

Design and construction of pedestrian and shared use paths shall be in accordance with all applicable standards. Treatments included herein are intended for aesthetic purposes only.

Curb ramps shall contain a detectable warning surface that consists of raised truncated domes per ADA and TAS requirements. Materials, width, depth and location of detectable warning surface shall be in accordance with TxDOT standards. Color shall be a dark brown or dark red in accordance with TxDOT standards.

WALL HEIGHT	SITE CONDITIONS	DROPOFF HEIGHT	SITE CONDITIONS
Less than 3 feet tall in Height	Smooth Concrete Finish	Less than 30" in Dropoff	TxDOT Standard Type "C"
More than 3 feet tall in Height	Complement Aesthetic/Texture of Retaining Wall in Region	More than 30" in Dropoff	TxDOT Standard Type "E"

Table A.1- Shared Use Path Wall Matrix

Table A.2- ADA Handrail Matrix



Figs A.8-A.12 Pedestrian Facilities Include ADA Ramps, Crosswalks, Sidewalks, and Hardscape Paving (clockwise from upper left)

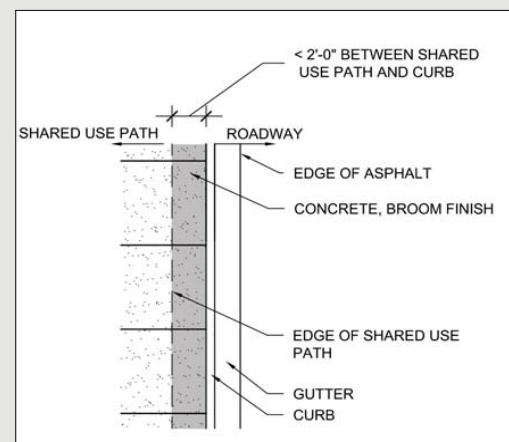


Fig A.13- Shared Use Path Roadway Buffer, Less than 2 Feet from Curb, No Traffic Barrier Present

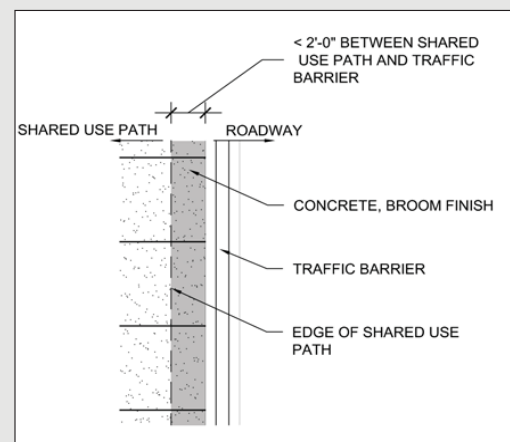


Fig A.14- Shared Use Path Roadway Buffer, Less than 2 Feet from Traffic Barrier

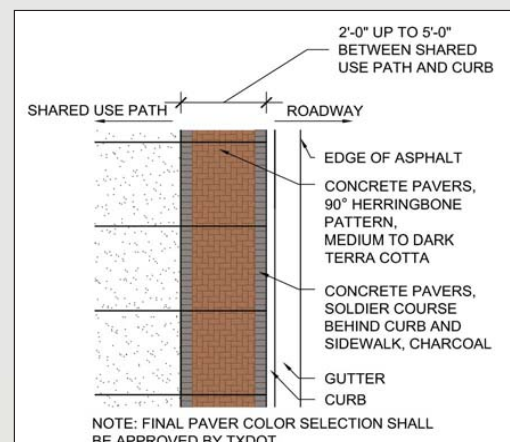


Fig A.15- Shared Use Path Roadway Buffer, 2 Feet to 5 Feet from Curb, No Traffic Barrier Present

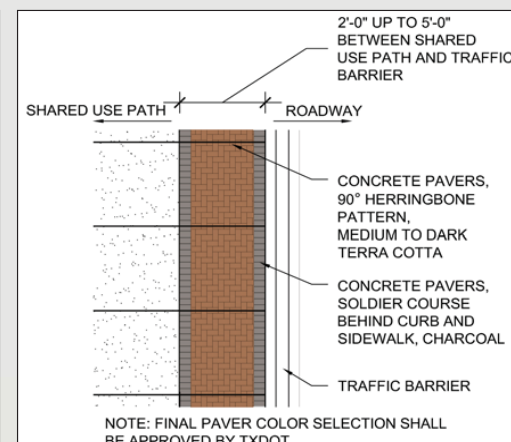


Fig A.16- Shared Use Path Roadway Buffer, 2 Feet to 5 Feet, from Traffic Barrier



















Fig A.17- Bicycle Paths



Fig A.18- Bicycle Lanes

Mobility35 Shared Use Path (SUP) Striping, Signage, and Design Treatments Guidance

Condition	Minimum (Default) Treatment	Higher Need Area Treatment Options			Based Upon Engineer Judgment and TxDOT Concurrence, also Consider:
		Shared Use Path Approach & Crossing	I-35 Frontage Road Approach	East-West Approach	
<p>Driveways, private roads, and alleys without signals</p> <p>Examples</p> <ul style="list-style-type: none"> Edgewood Avenue 31st Street (east of I-35) Maybe less than 500 ADT (sum of both directions). Up to 1000 ADT incl. Park ThirtyFive or Berrywood N of Braker. 	<p>No treatment beyond that required.</p>	<p>For new construction, the local city and developer may consider: painted crosswalk ("Continental"):</p> 	<p>For new construction, the local city and developer may consider, in advance of driveway:</p>  <p>R10-15</p>	<p>As necessary or required: Raised Detectable Pavers at each end of the crosswalk (ADA)</p> <p>In addition, for new construction, the local city and developer may consider, at crosswalk:</p>  <p>W11-15</p>  <p>W1-7</p>	<p>Additional treatment if deemed necessary (physical constraints, accident history, engineering judgment), including but not limited to:</p> <ul style="list-style-type: none"> - Additional lighting - Plastic delineators <p>The city, engineer, and TxDOT when consulted, should consider long-term maintenance and consistency with the rest of the path.</p>
<p>Public streets without signals</p> <p>Examples:</p> <ul style="list-style-type: none"> St. Edwards Drive Teri Road La Posada Huntland Drive 	<p>Stop sign/bar for vehicles IN ADVANCE (upstream) of painted crosswalk:</p>  <p>R1-1</p> <p>For SUP, painted crosswalk ("Continental"):</p> 	<p>Consider:</p>  <p>R15-8</p> <p>As a general note, use sparingly, for example if crash history indicates some benefit.</p>	<p>See minimum, plus, in advance of street, if not in conflict with other required signage:</p>  <p>R10-15</p>	<p>See minimum, plus, as necessary or required: Raised Detectable Pavers at each end of the crosswalk (ADA)</p> <p>In addition, at crosswalk:</p>  <p>W11-15</p>  <p>W1-7</p>	<p>See above.</p>
<p>Public streets with Signals</p>  <p>Examples:</p> <ul style="list-style-type: none"> Rundberg 32nd Street Woodward Woodland 	<p>Signal, stop bars, and pedestrian signals (with sound) as required plus: painted crosswalk ("Continental"):</p> 	<p>Consider:</p>  <p>R9-5</p>	<p>(See minimum, plus, in advance of street:</p>  <p>R10-15</p> <p>When signal includes a permissive left turn or a right-turn where yield compliance is low, give SUP a head-start (leading pedestrian interval).</p>	<p>See minimum, plus, as necessary or required: Raised Detectable Pavers at each end of the crosswalk (ADA)</p> <p>In addition, at crosswalk:</p>  <p>W11-15</p>  <p>W1-7</p> <p>When signal includes a permissive left turn or a right-turn where yield compliance is low, give SUP a head-start (leading pedestrian interval).</p>	<p>See above.</p>

NOTE: The Engineer is responsible for applying this guidance to specific cases conforming with current law, engineering judgment, and TxDOT concurrence. The document "Mobility35 Shared Use Path (SUP) Striping, Signage, and Design Treatments Guidance" dated 6/20/2018 was placed into this combined document on 7/25/2019.

Condition	Minimum (Default) Treatment	Higher Need Area Treatment Options			Based Upon Engineer Judgment and TxDOT Concurrence, also Consider:
		Shared Use Path Approach & Crossing	I-35 Frontage Road Approach	East-West Approach	
"Free-right" turns (FRT)	<p>If reconstructing the FRT, apply:</p> <ul style="list-style-type: none"> - Anticipated new RDM design guidelines for tightened radii and narrower FRTs - Signage: <p>R1-2 and (on both sides) W11-15 W16-7P</p>	<p>Example: Riverside Drive</p> <ul style="list-style-type: none"> - See Minimum 	<p>Example: Riverside Drive</p> <ul style="list-style-type: none"> - See Minimum - Plus, in ADVANCE of minimum signage: <p>R10-15 with additional yield triangle pavement markings just ahead of crosswalk:</p> <p>- At FRT crosswalk:</p> <p>R1-2 R1-5</p>	<p>Example: Riverside Drive</p> <ul style="list-style-type: none"> - See Minimum - Plus, in ADVANCE of minimum signage: <p>R10-15 with additional yield triangle pavement markings just ahead of crosswalk:</p> <p>- At FRT crosswalk: sign below plus W16 yellow down arrow on both sides</p> <p>R1-2 R1-5</p>	<p>See above.</p> <p>NOTE: Generally, apply same treatment to all four legs for consistency</p>

Special Cases	<p>Along the SUP, When SUP is anticipated to be less than 8 feet, this sign may be considered in advance of the reduced section:</p> <p>W5-4a As a general note, use sparingly and in spot locations where SUP users need to know there is a longer section of narrowed path, not for a single utility pole, for example.</p>	<p>51st Street Roundabout – RRFBs, raised crosswalks (no signal to stop traffic, innovative intersection, high SUP user traffic, etc.)</p>	<p>DDIs -- likely some combination of above)</p>	<p>RDM = Roadway Design Manual (TxDOT)</p> <p>Guiding principles</p> <ul style="list-style-type: none"> - Consistency across corridor and with abutting jurisdictions as appropriate for driver expectation - Consider short-term implementation and long-term maintenance costs - Consider corridor constraints <ul style="list-style-type: none"> o Visual obstruction o ROW/constraints - Design and striping solutions versus signs address multiple concerns: <ul style="list-style-type: none"> o Clutter/confusion of too many different signs o Driver habituation to signs for areas they travel frequently o Physical/ROW constraints
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