

**8820.9941 MINIMUM DESIGN STANDARDS: ON-ROAD BICYCLE FACILITY FOR URBAN; NEW OR RECONSTRUCTION PROJECTS.**

The bicycle facility design standard in this part applies when the road authority has determined that the roadway will be specifically designed to include an on-road bicycle facility.

New or reconstruction projects for urban roadways must meet or exceed the dimensions indicated in the following design chart.

Projected Traffic Volume	Design Speed	Lane Width (a)	Curb Reaction Distance (c)	Parking Lane Width (e)	Bikeway Design Roadways with Two Travel Lanes		Bikeway Design Roadways with Four or more Travel Lanes Urban
	(mph)	(feet)	(feet)	(feet)	(ADT)	(feet)	(feet)
ADT <2,000	25-30	10-11 (b)	1-2 (d)	7-8	<500	SL	N/A
					500-2,000	WOL 14-16 or BL 5-6	
	35-45	10-11 (b)	1-2 (d)	7-8	<500	SL or BL 5	BL 5-6
					500-2,000	WOL 14-16 or BL 5-6	
50 or over	11-12	2	8-10		BL 5-6	BL 5-6	
ADT 2,000-5,000	25-30	10-11 (b)	1-2 (d)	7-8		WOL 14-16 or BL 5-6	WOL 14-16 or BL 5-6
	35-45	10-11 (b)	1-2 (d)	7-8		BL 5-6	BL 5-6
	50 or over	11-12	2	8-10		BL-6	BL 6
ADT 5,000-10,000	25-30	10-11 (b)	1-2 (d)	7-8		BL 5-6	WOL 14-16 or BL 5-6
	35-45	10-11 (b)	1-2 (d)	7-8		BL 5-6 or PS 8	BL 5-6
	50 or over	11-12	2	8-10		BL 6 or PS 8 or SUP	BL 6 or PS 8 or SUP
ADT >10,000	30-35	10-11 (b)	1-2 (d)	7-10		BL 6 or PS 8-10 or SUP	BL 6 or PS 8-10 or SUP

40-45	11-12	1-4	7-10		BL 6 or PS 8-10 or SUP	BL 6 or PS 8-10 or SUP
50 or over	11-12	2-4	Not allowed		BL 6 or PS 8-10 or SUP	BL 6 or PS 8-10 or SUP

(SL = shared lane; BL = bicycle lane; WOL = wide outside lane; PS = paved shoulder; SUP = shared use path)

Engineering judgment should be used to choose a lane-width, on-road bicycle facility, or shoulder width dimension other than the widths indicated in the chart. Factors to consider include safety, speed, population/land use, benefit/cost analysis, traffic mix, peak hourly traffic, farm equipment, environmental impacts, terrain limitations, bicycle traffic, pedestrian traffic, on-street parking, intersection and driveway spacing, rights-of-way constraints, vehicle turn lane configuration, sight distance, sight lines, bus routes, other nonmotorized uses, functional classification, or other factors. Dimensions less than those indicated in the chart require a variance in accordance with parts 8820.3300 and 8820.3400.

(a) Twelve feet should be considered in industrial areas. Eleven feet minimum is required on four-lane, undivided facilities. One-way turn lanes must be at least ten feet wide, except 11 feet is required if the design speed is 50 mph or over.

(b) A combination of all minimum widths for the driving lane, on-road bicycle lane, and parking lane is only permissible with a variance. Ten feet may be considered where truck and bus volumes are relatively low, rights-of-way are constrained, and design speeds are 35 mph or less.

(c) Curb reaction shall be provided unless on-street parking, a bicycle facility, or a wide outside lane are provided adjacent to the curb.

(d) The state-aid engineer may approve a zero-foot curb reaction distance where the cross-section is constrained, appropriate curb types are used, and drainage collection is adequate. The curb must be constructed without a gutter or monolithically with the adjacent traveled way.

(e) In determining the parking lane width, the roadway ADT and the vehicle mix shall be taken into consideration. In commercial or industrial areas, the minimum parking lane width is eight feet.

One-way streets must have at least two through-traffic lanes.

When a raised median is included in the design of the two-way roadway, a one-foot minimum curb reaction distance to the median is required on either side of the median. Minimum median width is four feet.

Urban design roadways must accommodate a minimum nine tons structural axle load design.

Roadways not on the state-aid system are not subject to the minimum structural design strength requirements.

The minimum curb-to-curb width of a new bridge must be the required street width, but in no case less than required per Minnesota Statutes, section 165.04. HL-93 loading in the AASHTO

LRFD (load and resistance factor design) Specifications is required for new or reconstructed bridges. Rehabilitated bridges must have a load rating factor of at least 0.9 using the AASHTO Manual for Bridge Evaluation, LRFR (load and resistance factor rating) for inventory level. When the new bridge approach roadway includes elements for the accommodation of pedestrians or bicycles, the new bridge width must also provide for pedestrians or bicycles unless pedestrians or bicycles are otherwise accommodated.

For ADT less than 150, the widths of bridges to remain must be at least the sum of the lanes. For ADT greater than or equal to 150, the widths of bridges to remain must be at least the sum of the lanes plus one-half the sum of the shoulders, parking lane, and curb reaction distance. Bridges to remain must have a load rating factor of at least 0.75 using the AASHTO Manual for Bridge Evaluation, LRFR (load and resistance factor rating) for inventory level.

Clearance of 1.5 feet from the face of the curb to fixed objects must be provided when the posted speed is 40 to 45 mph. A ten foot clear zone measured from the driving lane must be provided when the posted speed is 50 mph or over.

Unless four lanes are provided, an engineering traffic study is required for volumes greater than 15,000 projected ADT to determine lane configuration and lane use.

**Statutory Authority:** *MS s 14.386; 162.02; 162.155*

**History:** *37 SR 697; 42 SR 485*

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