CHAPTER 8820
DEPARTMENT OF TRANSPORTATION
LOCAL STATE-AID ROUTE STANDARDS, FINANCING

8820.0100 DEFINITIONS.

[For text of subpart 1, see M.R.]

Subp. 1a. **ADT.** "ADT" means average daily traffic, which is computed by dividing the total number of vehicles traveling over a segment of roadway in one year by 365

[For text of subps 2 to 13c, see M R]

Subp 14 **Screening board.** "Screenmg board" means the county screening board or municipal screemng board appointed in accordance with law and authorized to recommend to the commissioner the size and money needs for each of their state-aid systems

[For text of subps 14a to 22, see M R]

Statutory Authority: *MS s 162.02, 162 09*

History: *MS s 32 SR 608*

8820.1500 CONSTRUCTION FUNDS.

[For text of subps 2 to 8, see M R]

Subp 9 **Advance from county state-aid highway fund.** When the commissioner approves a request from the county board for constructing an approved county state-aid project requiring county state-aid highway funds in excess of the county's available balance, the county may request to advance funds from the county state-aid highway fund The request for an advance must be in the form of a resolution The commissioner shall restore the county state-aid fund m accordance with the terms and conditions specified in the approved request

On an annual basis, the County Screening Board shall recommend to the commissioner guidance for advance funding

[For text of subps 9a and 10, see M R]

Subp 10b **Advance from municipal state-aid street fund.** When the commissioner approves a request from the governing body of an eligible urban municipality for constructing an approved municipal state-aid project requiring municipal state-aid street funds in excess of the urban municipality's available balance, then the urban municipality may request to advance funds from the municipal state-aid street fund. The request for an advance must be in the form of a resolution. The commissioner shall restore the municipal state-aid street fund in accordance with the terms and conditions specified in the approved request.

On an annual basis, the Municipal Screening Board shall recommend to the commissioner guidance for advance fundmg.

Subp 11 **County or municipal bond account.** With regard to a county or municipal bond account, a county or urban mumcipality that resolves to issue bonds payable from the appropriate state-aid fund in accordance with law for the purpose of establishing, locating, relocating, constructing, reconstructing, or improving state-aid streets or highways and, for a county only, constructing buildings and other facilities for maintaining a county state-aid highway under its jurisdiction, shall certify to the commissioner withm 30 days following

issuance of the bond, the amount of the total obligation and the amount of principal and interest that will be required annually to liquidate the bonded debt The commissioner shall set up a bond account, itemizing the total amount of principal and interest involved and shall annually certify to the commissioner of finance the amount needed from the appropriate state-aid construction fund to pay the principal due on the obligation, and the amount needed from the appropriate state-aid maintenance fund to pay the current interest The total maximum annual repayment of funds loaned from the transportation revolving loan fund plus state-aid bond funds that may be paid with state-aid funds is limited to 90 percent of the amount of the county's or urban municipality's last annual construction allotment preceding the bond issue Proceeds from bond sales are to be expended only on approved state-aid projects and for items determined to be eligible for state-aid reimbursement. A county or urban municipality that intends to expend bond funds on a specific state-aid project shall notify the commissioner of this intent without delay upon awarding a contract or executing a force account agreement Upon completion of each such project, a statement of final construction costs must be furnished to the commissioner by the county or the urban municipality. Counties may only fund the portion of maintenance buildings and structures related to state-aid transportation maintenance operations If a building or structure or any portion of it is used for other than state-aid mamtenance purposes during its useful life, the commissioner may determine an amount the county shall pay back to the county's maintenance account

[For text of subps 11a and 12, see M R]

Statutory Authority: *MS s 162 02; 162 09*

History: *MS s 32 SR 608*

8820.4030 [Repealed, 32 SR 608]

8820.4040 NATURAL PRESERVATION ROUTE CONSIDERATION.

Subpart 1 **Commissioner approval or denial.** Following receipt of the formal request, the commissioner shall approve or deny the request to designate the roadway as a natural preservation route The commissioner shall base the decision on the criteria in subpart 2 and shall notify the political subdivision in writing of the decision If the request is denied, a written explanation will be included with this notification.

Subp 2 **Factors considered.** The commissioner shall consider

A the economic, social, safety, and environmental impacts that may result from the designation or denial of the designation,

B the magnitude of the effects on adjacent lands and the value of the characteristics identified in part 8820.4020, subpart 2,

C the number of persons, either residents or the traveling public, affected by designation or denial of designation,

D the present and future use of adjacent lands,

E safety considerations as they apply to pedestrians, bicyclists; the motoring public, and fire, police, and emergency units, and

F. other related issues as may be pertinent to the roadway that have been identified from information submitted in part 8820 4020, subpart 2

Statutory Authority: *MS s 162 02; 162 09*

History: *MS s 32 SR 608*

8820.4090 NATURAL PRESERVATION ROUTE DESIGNATION REMOVAL.

A county board, after notice and a public hearing, may petition the commissioner by resolution to remove the natural preservation route designation if the board believes the characteristics on which the natural preservation route designation was approved have substantially been lost The petition for removing the designation must be based on such items as loss of aesthetic qualities, changes in land use, changes in road function, or significant

increases in accidents After receipt of the county board resolution, the commissioner shall approve or deny the petition to remove the natural preservation route designation from the roadway The commissioner shall base the decision on the criteria in part 8820 4040, subpart 2, notify the political subdivision in writing of the decision and include a written explanation with the notification

Statutory Authority: *MS s 162.02, 162 09*

History: *MS s 32 SR 608*

8820.9920 MINIMUM DESIGN STANDARDS; RURAL AND SUBURBAN UNDIVIDED; NEW OR RECONSTRUCTION PROJECTS.

New or reconstruction projects for rural and suburban undivided roadways must meet or exceed the minimum dimensions indicated in the following design chart.

Projected ADT (b)	Lane Width	Shoulder Width (g)	Inslope (c)	Recovery Area (d)	Design Speed (e)	Surfacing	Structural Design Strength (h)	Bridges to Remain (f) Width Curb to Curb
	feet	feet	rise run	feet	mph		tons	feet
0-49	11	1	1 3	7	30-60	Agg		22
50-149	11	3	1 4	9	40-60	Agg.		22
150-749	12	4	1:4	15	40-60	Paved	9	28
750-1499	12	4	1.4	25	40-60	Paved	9	28
1500 and over	12	6(g)	1 4	30	40-60	Paved	10	30

Engineering judgment may be used to choose a lane-width or shoulder-width dimension other than the widths indicated in the chart for roadways. Factors to consider may be safety, speed, population/land use, benefit/cost analysis, traffic mix, farm equipment, environmental impacts, terrain limitations, bicycle traffic, pedestrian traffic, other nonmotorized uses, functional classification, or other factors Widths less than those indicated in the chart require a variance in accordance with parts 8820 3300 and 8820 3400

(a) For rural divided roadways, use the geometric design standards of the Mn/DOT Road Design Manual, with a minimum ten tons structural design and minimum 40 mph design speed.

(b) Use the existing traffic for highways not on the state-aid system

(c) Applies to slope within recovery area only

(d) Obstacle-free area (measured from edge of traffic lane) Culverts with less than 30-inch vertical height allowed without protection in the recovery area.

Guardrail is required to be installed at all bridges where the design speed exceeds 40 mph, and either the existing ADT exceeds 400 or the bridge clear width is less than the sum of the lane and shoulder widths.

Mailbox supports must be in accordance with chapter 8818.

For roadways in suburban areas as defined in part 8820.0100, the recovery area may be reduced to a width of ten feet for projected ADT under 1,000 and to 20 feet for projected ADT of 1,000 or over. Wherever the legal posted speed limit is 40 mph or less, the recovery area may be reduced to a width of ten feet.

(e) Subject to terrain. In suburban areas, the minimum design speed may be equal to the current legal posted speed where the legal posted speed is 30 mph or greater

(f) Inventory rating of H 15 is required. A bridge narrower than these widths may remain in place if the bridge is not deficient structurally or hydraulically

(g) Shoulders are required to be a minimum width of eight feet for highways classified as minor arterials and principal arterials with greater than 1,500 ADT projected, at least two feet of which must be paved

(h) Phased projects must be constructed to attain design strength within three years of completion of final grading. In suburban areas, the minimum structural design strength is nine tons or ten tons as needed for system continuity.

Approach sideslopes must be 1:4 or flatter when the ADT exceeds 400

HS 25 loading with AASHTO Standard Specifications or HL-93 loading with load and resistance factor design (LRFD) is required for new or reconstructed bridges. HS 18 loading is required for all rehabilitated bridges. The curb-to-curb minimum width for new or reconstructed bridges must be no less than either the minimum required lane plus shoulder width or the proposed lane plus shoulder width, whichever is greater, but in no case less than the minimum lane widths plus four feet, and in no case less than required per Minnesota Statutes, section 165.04

For roundabout design, the design criteria of the current edition of the Minnesota State Aid Roundabout Guide are recommended

Statutory Authority: *MS s 162.02, 162.09*

History: *MS s 32 SR 608*

8820.9936 DESIGN STANDARDS, URBAN; NEW OR RECONSTRUCTION PROJECTS.

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

Functional Classification and Projected Traffic Volume	Design Speed	Lane Width (a)	Curb Reaction Distance (e)	Parking Lane Width
	mph	feet	feet	feet
Collectors or Locals with ADT < 10000	30-40	(b) 11	2	8
	over 40	12	2	10
Collectors or Locals with ADT ≥ 10000 and Arterials	30-40	(b) 11	(c) 4	10
	over 40	12	(c) 4	(d) 10

(a) One-way turn lanes must be at least ten feet wide, except 11 feet is required if the design speed is over 40 mph.

(b) Wherever possible, lane widths of 12 feet, rather than 11 feet, should be used

(c) May be reduced to two feet if there are four or more traffic lanes and on one-way streets

(d) No parking is allowed for six or more traffic lanes or when the posted speed limit exceeds 45 mph

(e) Curb reaction must be provided only where parking is not provided

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

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

Urban design roadways must be a minimum nine tons structural design, or ten tons if needed for system continuity Phased projects must be constructed to attain design strength within three years of completion of final grading

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 Mmnesota Statutes, section 165 04 HS 25 loadmg with AASHTO Standard Specifications or HL-93 loading with load and resistance factor design (LRFD) is required for new or reconstructed bridges and a minimum of HS 18 loadmg is required for all rehabilitated bridges Where the new bridge approach roadway mcludes 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 half the sum of the shoulders, parking lane, and curb reaction distance

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 recovery area measured from the driving lane must be provided when the posted speed exceeds 45 mph

For volumes greater than 15,000 projected ADT, at least four through-traffic lanes are required. Additional average daily traffic may be allowed if a capacity analysis demonstrates that level of service D or better is achieved at the higher traffic volume If the capacity analysis demonstrates that additional lanes are required only during peak traffic hours, then each additional driving lane may be used as a parking lane during nonpeak hours

"Level of service" has the meaning given it in the Highway Capacity Manual, Special Report 209, as revised and published by the Transportation Research Board of the National Research Council, Washington, D C The definition is incorporated by reference, is not subject to frequent change, and is located at the Minnesota State Law Library, 25 Rev Dr Martin Luther King Jr Blvd , St Paul, Mmnesota 55155

For roundabout design, the design criteria of the current edition of the Minnesota State Aid Roundabout Guide are recommended.

Statutory Authority: *MS s 162 02, 162 09*

History: *MS s 32 SR 608*

8820.9981 MINIMUM DESIGN STANDARDS: NATURAL PRESERVATION ROUTES, DESIGNATED NATIONAL FOREST HIGHWAYS WITHIN NATIONAL FORESTS, AND STATE PARK ACCESS ROADS WITHIN STATE PARKS; NEW OR RECONSTRUCTION PROJECTS.

Subpart 1. **Type I route.** New or reconstruction projects for type I natural preservation routes, designated national forest highways within national forests, and state park access roads within state parks must meet or exceed the minimum dimensions indicated in the following design chart

Surface Type	Design Speed (mph)	Lane Width (feet)	Shoulder Width (feet) (a)	Inslope (rise·run) (b)	Recovery Area (feet) (c)	Design Strength (tons)	Bridge to Remain (feet) (d)
Aggregate	30	11	1	1·3	3		22
Paved	30	11	2	1 3	9	9	22

(a) If the route has scenic vistas that will require parking vehicles along the shoulder, widening the shoulder at these locations is acceptable The designer will provide a four-foot paved shoulder if the route is a popular bicycle route.

(b) Applies to slope within recovery area only. Other design features, such as guardrails or retaining walls, should be considered in particularly sensitive areas in lieu of reconstructing the inslope in accordance with part 8820.4060

(c) Obstacle-free area (measured from edge of traffic lane)

Guardrail is required to be installed at all bridges where the design speed exceeds 40 mph, and either the existmg ADT exceeds 400 or the bridge width is less than the sum of the lane and shoulder widths

Mailbox supports must be in accordance with chapter 8818

(d) Inventory ratmg of HS 15 is required A bridge narrower than these widths may remain in place if the bridge is not deficient structurally or hydraulically

HS 20 loading with AASHTO Standard Specifications or HL-93 loading with load and resistance factor design (LRFD) is required for new bridges. HS 18 loading is required for all rehabilitated bridges The curb-to-curb minimum width for new or reconstructed bridges is the sum of the lane and shoulder widths plus four feet

Ditch depths and widths must be kept to the minimum required to function hydraulically and to provide for adequate snow storage when a standard ditch would negatively impact the surroundings.

The designer shall specify in the plan and special provisions that the clearing width is to be kept to the absolute minimum. In sensitive areas, the normal clearance allowed to a contractor for working room is zero unless otherwise required for special conditions

Curb and gutter may be used in lieu of a ditch section under the paved option. The lane width, shoulder width, and recovery area must be maintained.

For designated national forest highways within national forests, and state park access roads within state parks, this subpart applies only where the projected ADT is less than 100, unless the route has been designated as a natural preservation route.

For roundabout design, the design criteria of the current edition of the Minnesota State Aid Roundabout Guide are recommended

Subp. 2 **Type II route.** New or reconstruction projects for type II natural preservation routes, designated national forest highways within national forests, and state park access roads within state parks must meet or exceed the minimum dimensions indicated in the following design chart.

Surface Type	Design Speed (mph)	Lane Width (feet)	Shoulder Width (feet) (a)	Inslope (rise run) (b)	Recovery Area (feet) (c)	Design Strength (tons)	Bridge to Remain (feet) (d)
Aggregate	30	11	2	1 3	9		22
Paved	40	11	3	1 4	9	9	22

(a) The designer will provide a six-foot paved shoulder if the route is a popular bicycle route If the route has scenic vistas that will require parking vehicles along the shoulder, widening the shoulder at these locations is acceptable

(b) Applies to slope within recovery area only. Other design features, such as guardrail or retaining walls, should be considered in particularly sensitive areas in lieu of reconstructing the inslope in accordance with part 8820 4060 Approach sideslopes must be 1·4 or flatter within the recovery area when the ADT exceeds 400

(c) Obstacle-free area (measured from edge of traffic lane)

Guardrail is required to be installed at all bridges where the design speed exceeds 40 mph, and either the existing ADT exceeds 400 or the bridge width is less than the sum of the lane and shoulder widths

Mailbox supports must be in accordance with chapter 8818

(d) Inventory rating of HS 15 is required A bridge narrower than these widths may remain in place if the bridge does not qualify for federal-aid bridge funds

HS 20 loading with AASHTO Standard Specifications or HL-93 loading with load and resistance factor design (LRFD) is required for new bridges. HS 18 loading is required for all rehabilitated bridges. The curb-to-curb minimum width for new or reconstructed bridges is the sum of the lane and shoulder widths, but may not be less than 30 feet

Ditch depths and widths must be kept to the minimum required to function hydraulically, to be traversable if within the recovery area, and to provide for adequate snow storage when a standard ditch would negatively impact the surroundings

The designer shall specify in the plan and special provisions that the clearing width is to be kept to the absolute minimum In sensitive areas, the normal clearance allowed to a contractor for working room is zero unless required for special conditions

For designated national forest highways within national forests, and state park access roads within state parks, this subpart may be applied only where the projected ADT is less than 300, unless the route has been designated as a natural preservation route

For roundabout design, the design criteria of the current edition of the Minnesota State Aid Roundabout Guide are recommended

Subp. 3 **Type III route.** New or reconstruction projects for type III natural preservation routes, designated national forest highways within national forests, and state park

access roads within state parks must meet or exceed the minimum dimensions indicated in the following design chart.

Surface Type	Design Speed (mph)	Lane Width (feet)	Shoulder Width (feet) (a)	Inslope (rise. run) (b)	Recovery Area (feet) (c)	Design Strength (tons)	Bridge to Remain (feet) (d)
Aggregate	30	12	3	1 4	10		24
Paved (e)	30	12	4	1:4	10	9	24
Paved	40	12	4	1·4	15	9	24

(a) The designer will provide a six-foot paved shoulder if the route is a popular bicycle route If the route has scenic vistas which will require parking vehicles along the shoulder, widening the shoulder at these locations is acceptable

(b) Applies to slope within recovery area only. Other design features, such as guardrail or retaining walls, should be considered in particularly sensitive areas in lieu of reconstructing the inslope in accordance with part 8820.4060 Approach sideslopes must be 1:4 or flatter within the recovery area when the ADT exceeds 400.

(c) Obstacle-free area (measured from edge of traffic lane)

Guardrail is required to be installed at all bridges where the design speed exceeds 40 mph, and either the existing ADT exceeds 400 or the bridge width is less than the sum of the lane and shoulder widths.

Mailbox supports must be in accordance with chapter 8818.

(d) Inventory rating of HS 15 is required. A bridge narrower than these widths may remain in place if the bridge does not qualify for federal-aid bridge funds.

(e) This standard may be applied only when the project is located in a subdivided area or an area in a detailed development process, and physical restraints are present that prevent reasonable application of another level of these standards.

HS 25 loading with AASHTO Standard Specifications or HL-93 loadmg with load and resistance factor design (LRFD) is required for new bridges. HS 18 loading is required for all rehabilitated bridges. The curb-to-curb minimum width for new or reconstructed bridges is the sum of the lane and shoulder widths, but may not be less than 32 feet

Ditch depths and widths must be kept to the minimum required to function hydraulically, to be traversable if within the recovery area, and to provide for adequate snow storage when a standard ditch would negatively affect the surroundings.

The designer shall specify in the plan and special provisions that the clearing width is to be kept to the absolute minimum. In sensitive areas, the normal clearance allowed to a contractor for working room is zero unless required for special conditions.

For roundabout design, the design criteria of the current edition of the Minnesota State Aid Roundabout Guide are recommended.

Statutory Authority: *MS s 162.02, 162 09*

History: *MS s 32 SR 608*

8820.9995 MINIMUM BICYCLE PATH STANDARDS.

Minimum Bicycle Path Standards

For Off-Road Design, the following shall apply	
Minimum Surface Width (two-way)	8 ft (b)
Shoulder/Clear Zone	2 ft (c) (d)
Inslope	1 2 (rise:run)
Design Speed	20 mph (e)
Vertical Clearance	10 ft

(a) For on-road bicycle facilities, the appropriate tables in the Minnesota Bicycle Transportation Planning and Design Guidelines are recommended for design purposes

(b) Ten feet is desired for a combined bicycle/pedestrian path. Five feet is required for a one-way bicycle path

(c) Whenever practicable, the shoulder/clear zone of an off-road bike path should be carried across bridges and through underpasses Minimum structure clear width must be 12 feet. When the full width of the approach bike path (surface width plus shoulder/clear zone) is greater than the proposed clear width of the structure, then lead-in bicycle safety railing is required at each end of the bridge or underpass As an alternative to lead-in bicycle safety railing, the surface width of the approach bike path may be narrowed at a 1 50 taper while maintaining minimum surface width and shoulder/clear zone through the structure

(d) Clear zone is measured from the edge of the bicycle travel lane

(e) Use a 30 mph design speed for grades longer than 500 feet and greater than four percent, from the uphill point where the grade equals four percent to 500 feet beyond the downhill pomt where the grade becomes less than four percent. The maximum allowable grade is 8 3 percent.

Statutory Authority: *MS s 162 02; 162 09*

History: *MS s 32 SR 608*