

 OREGON DEPARTMENT OF TRANSPORTATION		TECHNICAL SERVICES		
Roadway Engineering Unit		BULLETIN		
SUBJECT Map 21 Changes To NHS Designation To State, County, And City Facilities	FINAL NUMBER RD14-02(B)	EFFECTIVE DATE 3/01/2014	VALIDATION DATE	SUPERSEDES or RESCINDS New
WEB LINK(S) http://www.oregon.gov/ODOT/HWY/TECHSERV/Pages/technicalguidance.aspx				
TOPIC/PROGRAM Highway Design Manual	APPROVED SIGNATURE  Bob Pappe, P.E., PLS State Traffic/Roadway Engineer			

PURPOSE

With the implementation of MAP 21, approximately 630 miles of existing state, county, and city roads were added to the National Highway System (NHS). Any project on an NHS route must, at a minimum, be designed in accordance with AASHTO's "A Policy on Geometric Design of Highways and Streets" (23 CFR Part 625, 23 USC, Section 109, and NS 23 CRF, Part 625). Adding the NHS designation to Local Jurisdiction roadways also obligates ODOT to provide oversight, ensuring that projects on these roadways are properly designed. The purpose of this technical bulletin is to present the changes made to the HDM that result from these requirements.

GUIDANCE

In section 1.3.2.2 ODOT 4R/New Design Standard, the following bullet will be added:

3. ODOT new construction minimum vertical clearance:

- 17'-4" on High Routes
- 17'-0" on NHS (not on High Routes)
- 16'-0" on non-NHS (not on High Routes)
- For vertical clearance on Local Agency jurisdiction roadways, see section 4.5.1.1

Table 1-1 will be updated as shown below:

Table 1:1: Design Standards Selection Matrix

Project Type	Roadway Jurisdiction				
	State Highways			Local Agency Roads ¹	
	Interstate	Urban State Highways	Rural State Highways	Urban	Rural
Modernization/ Bridge New/Replacement	ODOT 4R/New Freeway	ODOT 4R/New Urban	ODOT 4R/New Rural	AASHTO	
Preservation/ Bridge Rehabilitation	ODOT 3R Freeway	ODOT 3R Urban	ODOT 3R Rural	AASHTO ²	ODOT 3R Rural ³
Preventive Maintenance ⁴	1R	1R	1R	NA	NA
Safety- Operations- Miscellaneous/ Special Programs	ODOT Freeway ⁵	ODOT Urban ⁵	ODOT Rural ⁵	AASHTO	AASHTO

¹ For projects on a local jurisdiction route, the local authority may, at its option, use either the appropriate AASHTO's "A Policy On Geometric Design Of Highways And Streets - 2011" standard or select a standard of their own choice. This discretion is given by ORS 368.036. (ORS 368.036 applies to counties only, not cities.). **AASHTO standards shall be used for all local agency jurisdiction roadway projects on the National Highway System (NHS).**

² The local agency has the choice to use AASHTO's "A Policy On Geometric Design Of Highways And Streets - 2011" or ODOT 3R Urban design standards. **Local Agencies may use AASHTO for Vertical Clearance requirements on Local Agency Jurisdiction Roads.**

³ The local agency has the choice to use AASHTO's "A Policy On Geometric Design Of Highways And Streets - 2011" or ODOT 3R Rural design standards. **Local Agencies may use AASHTO for Vertical Clearance requirements on Local Agency Jurisdiction Roads.**

⁴ Federally funded Preventive Maintenance work, which includes Chip Seals and Thin Overlays, will be required to follow 1R standards.

⁵ The appropriate ODOT 3R standard may be used for some projects. Selection is case by case. Designer to confirm appropriate standard with Region Roadway Manager.

The following will be added to section 4.5:

4.5.1.1 Vertical Clearances for Local Jurisdiction Roads

Local Jurisdiction roads that are part of the NHS are required to meet AASHTO standards for vertical clearance. Also, any project using federal funds on Local jurisdiction roads are required to meet AASHTO standards for vertical clearance. For new construction or reconstruction, provide 16 ft clearance over the entire roadway width (including travel lanes and paved shoulders). Existing clearances of 14 ft may be retained. In highly urbanized areas, a minimum clearance of 14 ft may be provided if there is an alternate route with 16 ft clearance, or if a local ordinance exists. Additional clearance should also be provided for future overlays of the under passing roadway.

The following changes will be made to chapter 5 regarding lane width and vertical clearance on 3R freeway projects:

5.2.8 Vertical Clearance

[add the following sentence to the end of the section]

For vertical clearance requirements on Local Agency jurisdiction roadways, see section 4.5.1.1

5.3.4 Lane Width

All traffic lanes for 3R freeway projects shall be 12' wide. AASHTO standards for lane width may be used on Local Agency jurisdiction roads.

5.3.8 Vertical Clearance

[add the following sentence to the end of the section]

For vertical clearance requirements on Local Agency jurisdiction roadways, see section 4.5.1.1

Footnote number 1 for Table 6-6 will be updated as shown below:

Table 6-6: ODOT 3R Urban Non-Freeway Design Standards

Highway Feature	Highway Average Daily Traffic (ADT)			
	< 750	750 - 2000	2001 - 4000	> 4000
Travel Lane ¹ <10% Trucks ² >10% Trucks ²	10' 10'	10' 11'	11' 12'	11' 12'
Left Turn Lane ³	12'	13'	13'	14'
Right Side Shoulder ⁴	2'	3'	4'	6'
On Street Parking (Where Applicable)	7'	8'	8'	8'
Left Side Clearance (Shy Distance) ⁵ posted speed ≤ 35 mph posted speed ≥ 40 mph	1' 2'	1' 2'	1' 2'	1' 2'
Curbside Sidewalk	6'	6'	6'	6'
Cross Slope (crown) ⁶	2%	2%	2%	2%
Maximum Superelevation ⁷ design speed ≤ 40 mph design speed ≥ 45 mph	4% 6%	4% 6%	4% 6%	4% 6%
Vertical Clearance	See Section 6.4.6 and Section 4.5.1			

1. A minimum 12 foot travel lane is required on nationally recognized truck routes (see current Route Map 7) and a minimum 11 foot lane is required on all NHS Routes on State jurisdiction roadways only. Local Agencies may use AASHTO standards for lane width on Local Agency jurisdiction roads.
2. Trucks are defined as heavy vehicles, single unit configuration or larger (six or more tires).
3. Left turn lane width include 2 foot medial separator.
4. Where a right side shoulder is not used, a right side shy distance from curb or on-street parking is required. This shy distance is 2 feet for posted speeds up to 35 mph and 3 feet for 40 mph and above.
5. Left side clearance (shy distance) required from the curb or on-street parking and is the only applicable to one way roadways.
6. See Table 6-9 and Table 6-10 for improvement criteria and corrective measures.
7. Numbers shown are for new design. See Section 6.4.4. Horizontal Curvature and Superelevation correction.

The following change will be made to chapter 6 regarding vertical clearance on 3R projects:

6.4.6 Vertical Clearance

[add the following sentence to the end of the section]

For vertical clearance requirements on Local Agency jurisdiction roadways, see section 4.5.1.1

The footnote on Table 7-3 will be modified as shown below:

Table 7-3: Minimum 3R Lane and Shoulder Widths
Rural Non-Freeway (Arterials, Collectors, Local Streets)

Design Yr Volume (ADT)	Average Running Speed	Lane Width	Shoulder Width
Less Than 750 Vehicles	All Speeds	10'	2'
750 to 2000 Vehicles	Under 50 mph	11'	2'
	50 mph or Over	11'	3'
Over 2000 Vehicles	All Speeds	11'	4'

NOTE: A minimum 11 foot lane is required on all NHS Routes on ODOT jurisdiction roadways only. Local Agencies may use AASHTO standards for lane width on Local Agency jurisdiction roads.

The following change will be made to chapter 7 regarding vertical clearance on 3R projects:

7.6.5 Vertical Clearance

[add the following sentence to the end of the section]

For vertical clearance requirements on Local Agency jurisdiction roadways, see section 4.5.1.1

The following discussion on design exceptions will be included in chapter 14:

14.1.1.3 Design Exceptions for Local Agency Projects

For all projects on State Highways or NHS roads, any design element that does not meet HDM or AASHTO standards respectively must be justified and documented by means of a design exception. Generally, ODOT is the agency with authority to approve design exceptions; and FHWA also needs to review and approve design exceptions for all projects subject to Full Federal Oversight. However, the local government may process and approve design exceptions in the following cases.

14.1.1.3.1 Federally Funded Certified Local Agency Projects on Local Agency Jurisdiction Roads:

Certified local agencies approve design exceptions on federally-funded projects, except those on bridges and state highways. The ODOT Regional Local Agency Liaison uses an established audit process for Certified Local Agencies to ensure consistent design quality.

14.1.1.3.2 Federally Funded Projects on (non-certified) Local Agency Jurisdiction Roads:

For all federally-funded projects on NHS and non-NHS local agency jurisdiction roads, contract plans and design exceptions are processed through the ODOT Regional Local Agency Liaison who then reviews with the Region Tech Center to ensure consistent design quality.

14.1.1.3.3 Non-Federally Funded Projects on NHS Local Agency Jurisdiction Roads:

For non-federally funded projects on local agency jurisdiction NHS roads, certified and non-certified local agencies may process and approve design exceptions, and ODOT ensures design quality by means of an audit process. The contract plans and design exceptions for all non-federally funded projects on local agency jurisdiction NHS roads are provided to the ODOT Technical Services Roadway Engineering Unit either on a project by project or annual basis. In addition, a list of all projects is to be submitted on an annual basis. Some of these projects are then selected for review. ODOT works with FHWA and local governments to correct any issues as needed. See appendix Q for information on roles and responsibilities and lane width requirements.

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