

MAP 21- NHS Standards: ODOT and Local Agencies

With the addition of approximately 600 miles of State, County, and City roads to the National Highway System (NHS) as a result of MAP-21, a working group made up of City, County, State, and FHWA representatives was formed to discuss the added NHS mileage and to determine the impact on City, County, and State design standards. From FHWA guidance, any NHS route has to be designed in accordance with AASHTO's "A Policy on Geometric Design of Highways and Streets"). Discussions with local agency representative indicated that not all local agencies current design practices meet AASHTO standards. ODOT's Highway Design Manual (HDM) is in general agreement with AASHTO's Green Book; therefore, it can be used for NHS routes. Below is the proposed design standard guidance for City, County, and State for those roadways part of the NHS.

- **Design Standards Selection Matrix (HDM Table 1-1) –Table 1-1 provides design requirements for projects based upon project type, roadway jurisdiction (State or Local) and whether the project is urban or rural. In an effort to provide design flexibility, the following changes to HDM Table 1-1 establish the standards for local agencies while complying with FHWA guidance regarding the added NHS routes.**
 - No change for ODOT facilities. ODOT will continue to use the Standards outlined in Table 1-1 of the Highway Design Manual.
 - For local Facilities- Footnote will be added to Table 1-1 that notes local agencies can use AASHTO standards for all types of projects. Modernization projects will not change (AASHTO standards will be used). For those local agencies that use their own standards and may not currently meet AASHTO standards- those projects will be required to meet AASHTO standards.
 - Additional footnote with be added to HDM Table 1-1 that allows maximum flexibility for locals to use either AASHTO or ODOT 3R for Preservation projects.
 - See attached HDM Table 1-1 revisions.
- **Vertical Clearance - ODOT requirements for vertical clearance are different than those vertical clearance requirements outlined in AASHTO standards. The following outlines the vertical clearance requirements for ODOT and Local Agency facilities for NHS routes.**
 - No change for ODOT facilities- NHS routes added to the State Highway system will follow current HDM guidance. Oregon Vertical Clearance Standard will have NHS routes added and note that the map is specific to ODOT jurisdiction highways.
 - For Local Facilities- Local Agencies will use AASHTO vertical clearance for both Modernization and Preservation projects.
- **Lane Widths - ODOT's HDM lane width requirements are specific to type of project (modernization or preservation), location (urban or rural) and highway**

segment designation (similar to functional class). Local Agencies have been given the flexibility to use AASHTO or the HDM. The following outlines the lane width requirements for State and Local Agency facilities for NHS routes.

- No change for ODOT facilities. ODOT projects will continue to use HDM guidance.
- For Local Facilities- Local Agencies can use AASHTO for lane width. 3R Tables 6-6 & 7-3 will be revised to note that minimum 11' lanes for NHS Routes and 12' lane for nationally recognized truck routes only apply to ODOT jurisdiction highways.
- See attached HDM Table 6-6 and Table 7-3.

- **Shoulder and Clear Zone/Guardrails - As with lane width, ODOT HDM shoulder widths are specific based on certain parameters. For local agencies, flexibility has been given to use either ODOT or AASHTO standards regarding shoulder width and clear zone. The following outlines guidance for ODOT and Local Agencies.**
 - No change for ODOT facilities
 - For Local Agencies- Local agencies will need to follow ODOT 3R or AASHTO guidance, including safety features.

- **Design Exceptions, Certified Agencies**
 - For Local Agencies- Design Exceptions will continue to be processed through ODOT Local Agency office.

- **Design Exceptions - The following outlines the direction regarding design exceptions that meets FHWA's expectation concerning oversight responsibilities for the existing and added NHS routes on both State and Local jurisdiction facilities.**
 - For Local Agencies-
 - Local Agency projects on the NHS **with** Federal Dollars involved:
 - Follow current process- Design exceptions are processed through ODOT.
 - Local Agency project on the NHS **with no** Federal Dollars involved and on **State** jurisdiction roadway:
 - Design exceptions are processed through ODOT.
 - Local Agency projects on the NHS **with no** Federal Dollars involved on **Local** jurisdiction roadway:
 - Local Agency process and approve design exceptions, maintain a list of those Design Exceptions.
 - Local Agency provides ODOT with a list of projects, contract plans, and list of design exceptions approved by the Local Agency on a project by project basis or yearly basis for audit purposes.

- **Plan Reviews - As with the Design Exception guidance, the following outlines the process to be used for project plan reviews in order to meet FHWA's expectation regarding oversight responsibilities.**

- Local Agency projects on the NHS **with** Federal Dollars involved:
 - Design Exceptions and Plan Review through ODOT.
- Local Agency projects on the NHS with no Federal Dollars involved on **State** jurisdiction roadway:
 - Design exceptions and Plan Review are processed through ODOT.
- Local Agency projects on the NHS **with no** Federal Dollars involved on **Local** jurisdiction roadway-
 - Local Agency provides ODOT with a list of projects and contract plans on a project by project basis or yearly basis for audit purposes.

The following HDM tables outline the changes to be made as a result of the FHWA, ODOT, City, and County MAP21- NHS impact working group meetings. In addition to the changes to the HDM tables, other text in the HDM may need to be revised to fulfill the intent of the HDM design standard changes.

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.

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'	10'	11'	11'
>10% Trucks ²	10'	11'	12'	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	1'	1'	1'	1'
posted speed ≥ 40 mph	2'	2'	2'	2'
Curbside Sidewalk	6'	6'	6'	6'
Cross Slope (crown) ⁶	2%	2%	2%	2%
Maximum Superelevation ⁷				
design speed ≤ 40 mph	4%	4%	4%	4%
design speed ≥ 45 mph	6%	6%	6%	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.

² Trucks are defined as heavy vehicles, single unit configuration or larger (six or more tires).

³ Left turn lane widths 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 curb or on street parking and is 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

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.**