



Connecticut DOT

Number: EB-2023-1

Office of Engineering

Date: January 18, 2023

## ENGINEERING BULLETIN

Division Chief, Engineering

### Highway Design Manual Revisions

The content of several chapters of the Department's Highway Design Manual (HDM) has been rearranged and rewritten to clarify project scope type descriptions to conform with AASHTO and to facilitate the use of the HDM. This version of the Highway Design that incorporates the January 2023 revisions shall be used on all project with a Design Approval date after June 1, 2023.

The updated HDM is available on the Department's [Engineering and Construction Information Resources](#) web page.

#### *Summary of Changes – January 2023 Revisions*

##### Chapter 1

1. Guidance on Complete Streets initiatives has been added to ensure that the users of this manual consider all modes of transportation in the design of highway/bridge projects.
2. A project's scope of work is a major control in the selection of a set of design criteria to be used for projects and should be placed towards the beginning of the manual. As such, the various project scope of work in Chapter 6, Section 6-5.0 have been moved to Section 1-1.03 so the users of this manual are made aware of which chapters to use to determine design criteria for projects. Additionally, several terminologies have been changed as follows:
  - a. The term "4R (*Freeways*)" which has been used to design all projects on existing freeways has been removed throughout the manual and has been replaced with "Reconstruction (*Freeway*).". The term "4R" may confuse users to think that the 4R definition is only used on Freeways which is not the case. The fourth R in 4R is "Reconstruction," a scope used on both Freeways and non-Freeways. To avoid this confusion, the term "4R" is being eliminated and replaced to be consistent

with existing terminology in the rest of the manual. The new project scope type, “Reconstruction (Freeway),” will include all work on freeways except for resurfacing. Resurfacing of a freeway is now included in the “Preservation/Preventive Maintenance” type work.

- b. The term “*Major Reconstruction (Non-Freeway)*” has been changed to “Reconstruction (Non-Freeway)” to better align with AASHTO’s terminology.
- c. “*Pavement Preservation*” has been changed to “Preservation/Preventive Maintenance” to better align with FHWA definitions.
- d. Currently, the types of work included in a Bridge’s scope of work consist of replacement, reconstruction and rehabilitation. “*Reconstruction*” has been removed from the scope of work for a bridge throughout the manual per new FHWA definitions.

## **Chapter 2**

1. Section 2-9.0, Roadside Safety has been modified to provide clarification and better guidance on the following:
  - a. Section 2-9.01.01 was re-written to provide better clarification/guidance on the evaluation of clear zone requirements for 3R projects.
  - b. Section 2-9.02, Item #4, has been updated to align with Chapter 13 with respect to “Obsolete Guiderail.”

## **Chapter 3**

1. As noted in Chapter 1 above, the following terminologies have been changed in this chapter:
  - a. The 4R nomenclature has been removed and changed, to refer to just “Freeways”.
  - b. Section 3-3.0, Pavement Preservation, has been renamed to “Preservation/Preventive Maintenance.”
2. Section 3-1.04.03 has been modified to provide better guidance on evaluating vertical clearances at bridges.
3. The Highway Bridge Replacement and Rehabilitation Program (HBRRP) mentioned in Sections 3-2.01 and 3-2.03 no longer exists, therefore, any reference to the HBRRP has been removed from the manual.
4. The entire Section 3-2.04, Design Procedures for Local Bridge Projects, has been removed from the manual. The information contained in this section is covered in the Department’s Local Bridge Program Manual.

5. Section 3-3.01 has been modified to include ADA guidance on pavement preservation projects. Currently, Section 3-3.0 only discusses pavement preservation. Other types of preventive maintenance project work can always be added to this work Scope.

### **Chapter 5**

1. The minimum radius requirement for horizontal curvature on roadways with design speeds of 45 mph or less and an  $e_{\max} = 4\%$  has been changed in Figures 5B, 5C, 5D, 5E and 5F. This adjustment is made to be consistent with the AASHTO green book resulting from a change in friction factors in the development of superelevation.

### **Chapter 6**

1. Section 6-5.0 has been moved to Chapter 1. Specifically, Sections 6-5.01 and 6-5.02 have been moved to Sections 1-1.03 and 1-1.04, respectively.
2. Section 6-6.0 and proceeding sections were moved up because of the change noted above.

### **Chapter 8**

1. Section 8-3.02.02 has been changed to reflect the adjusted minimum radii requirements for low-speed urban streets in Figures 8-3A to 8-3C. This is consistent with the change made in Chapter 5.

### **Chapters 9-12**

1. Various revisions to correct the references from Chapter 6 to Chapter 1.