





The information contained in the Introduction, dated May 2022, has been updated to reflect the January 2023 Errata. The errata addresses errors, changes in procedure, changes in NDOT department titles, changes in other Roadway Design Manual chapters and other reference material citations occurring since the latest publication of this chapter.

# Introduction

## 1. MANUAL UPDATES

The date given in the header (May 2022 for the Introduction) is the date that the individual Chapter was approved for use by the **FHWA**. The Errata date (the date of the latest update/ correction of the chapter) is found below the header. The Roadway Design Manual is updated periodically as circumstances warrant, generally between two and four times a year.

This manual may be found on the internet at:

<http://www.roads.nebraska.gov/business-center/design-consultant/rd-manuals/>

## 2. PURPOSE OF MANUAL

This manual has been developed to provide guidance and assistance to the roadway designer and other **Nebraska Department of Transportation (NDOT)** personnel in the practices and procedures for the detailed design of roadways and the preparation of contract plans. The manual has been developed to meet the following principal objectives:

- Document **NDOT** guidelines with regard to design criteria and practices for the development of plans
- Define design criteria to guide judgments and decisions made by **Roadway Design Division** personnel
- Describe the coordination necessary to develop plans in a timely and cost effective manner
- Describe the most current and effective design techniques and practices and to present charts, tables and other information useful to designers.

## 3. HOW TO USE THE MANUAL

This manual has been written to provide information for both the new designer and for the more experienced designer. General guidelines and design practices are described. For more detailed explanation of the topics, references are provided for the reader.

It should be noted that the **NDOT** design criteria presented in this book generally conforms to the guidelines of the **American Association of State Highway and Transportation Officials (AASHTO)** in publications such as **AASHTO's A Policy on Geometric Design of Highways and Streets**. In some instances, where nationwide guidelines do not fit Nebraska conditions, **NDOT** design practice differs from **AASHTO** guidelines. For those situations **NDOT** guidelines take precedence over **AASHTO's** guidelines. However, if the **NDOT** design criteria cannot be attained the designer should follow **AASHTO's** guidelines.

**NDOT** and the **Board of Public Roads Classifications and Standards** have developed the Nebraska Minimum Design Standards (MDS). These standards represent *minimum* design values. Higher values should be used. The designer should contact his/ her supervisor if **NDOT** standards cannot be met because a relaxation of the *MDS* will be required and design exception approval may be required (See Chapter One: Roadway Design Standards, Section 10, of this manual).

Throughout the manual, the words "shall", "should", and "may" are used to describe the appropriate application of various design techniques. The following definitions describe the proper application of these terms:

- "Shall" is a mandatory condition; the designer will make every practical effort to follow the criteria. If it is impractical to follow the "shall" criteria, the designer needs to obtain **Assistant Design Engineer** approval and document the decision made, or obtain authorization for a design exception or a relaxation of the *MDS* (See Chapter One: Roadway Design Standards, Section 10, of this manual).
- "Should" is an advisory condition; the designer is recommended, not mandated, to follow the criteria. For situations where it is impractical to follow the "should" criteria, the designer needs to obtain **Assistant Design Engineer** approval and document the decision made (See Chapter One: Roadway Design Standards, Section 10, of this manual)."
- "May" is a permissive condition; it is recommended that the designer make reasonable efforts to follow the design criteria. For situations where it is impractical to follow the "may" criteria, the designer does not need authorization for design variances.

Several formatting conventions have been used in the manual to aid the designer in locating information. When Exhibits are discussed in the text, the titles are highlighted, e.g., EXHIBIT 1.1. Individuals, sections, divisions, and other organizations with which interaction may be required appear in bold lettering, e.g., **Roadway Design Division Engineer**. References to material in other chapters of this manual are shown as: Chapter One: Roadway Design Standards, for example, with pertinent sections noted as appropriate.

#### 4. SOURCES OF INFORMATION

The primary sources of roadway design guidance and standards for **NDOT** are A Policy on Geometric Design of Highways and Streets (Green Book), A Policy on Design Standards Interstate System (I-State Green Book), the *MDS*, and this manual. Other sources of information are listed in the REFERENCES section found at the back of each Chapter. Suppliers of construction materials also may be used as sources of information for special design problems such as special culverts, retaining walls, impact attenuators, etc.

Where possible, Internet connections have been given for reference materials cited in this manual. This connection will follow the first citation of a document in a chapter and will also appear in the REFERENCES section found at the back of the Chapter.