Complete Streets Design Guidelines

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PDH: 8

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Module 1: Introduction

Learning Objectives

By the end of this section, you will be able to:

- **Identify** the historical context and mission of the Knoxville Regional Complete Streets initiative.
- **Define** the fundamental criteria that characterize a "complete street" in urban planning and engineering.
- **Recognize** the professional responsibilities of designers regarding local ordinances and state laws.

Executive Summary: Complete streets are intentionally designed and operated to ensure safe, attractive, and comfortable access for all users—pedestrians, bicyclists, motorists, and transit riders—regardless of age or ability.

Project Background

In the latter half of 2008, the Knoxville Regional Transportation Planning Organization (TPO) initiated a mission to enhance regional street completeness. This effort originated from two distinct corridor studies that provided recommendations for transforming suburban corridors into complete streets. These guidelines serve as the subsequent step, offering comprehensive guidance and recommendations for regional application.

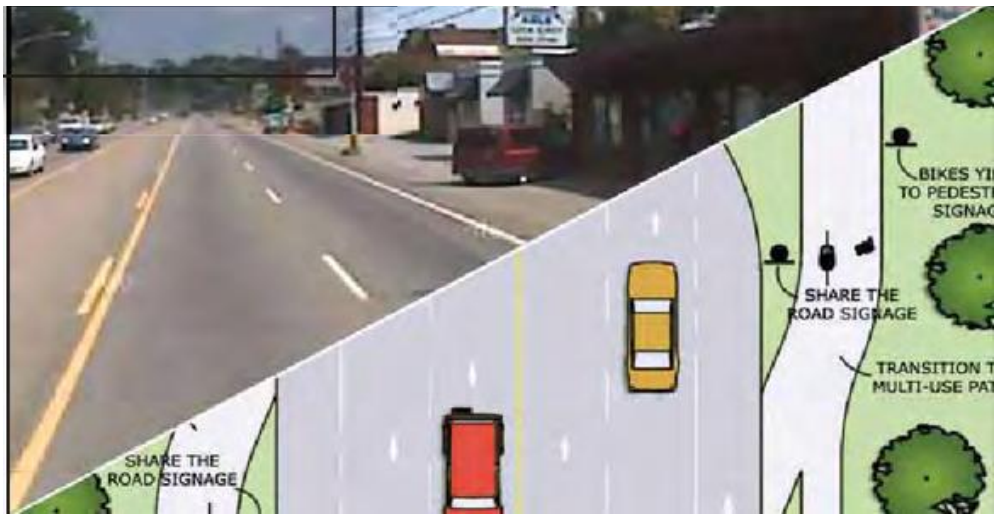

Figure 1-1: Share The Road Signage

Scope and Professional Application

This course provides technical guidance for both design professionals and the layperson. While it offers extensive reference material, practitioners must maintain a high degree of professional diligence:

- **Seek** additional reference material to deepen understanding of presented concepts.
- **Verify** compliance with all local ordinances and state laws governing street design within your specific jurisdiction.

Checkpoint Quiz

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1. **Who is the primary target audience for these guidelines?**
   a) Only licensed professional engineers
   b) Only municipal planning staff
   c) Both design professionals and the general public
   d) Federal Highway Administration officials only

Answer: (c). Both design professionals and the general public. These guidelines are intended for use by the design professional and the layperson alike.

Module 2: What are Complete Streets?

Learning Objectives

By the end of this section, you will be able to:

- **Evaluate** the characteristics of "incomplete streets" and their impact on public safety.
- **Explain** the paradigm shift required in traditional road design philosophy to achieve street completeness.
- **Identify** the multi-agency stakeholders involved in the national Complete Streets movement.

Executive Summary: Complete streets represent a shift from vehicle-centric design to a holistic approach that prioritizes the health, safety, and welfare of the entire right-of-way for all existing and future users.

The Safety Mandate

Traditional "incomplete" roads often lack essential infrastructure, contributing to nearly 5,000 pedestrian and bicyclist fatalities annually on U.S. roads. Common hazards include:

- **Absence** of sidewalks or crosswalks.
- **Insufficient** lane widths for bicycle sharing.
- **Inadequate** transit waiting areas.
- **Poor** accommodation for individuals with disabilities.

Figure 2-1: Many streets are incomplete: they lack sidewalks and/or crosswalks, bicycle facilities and places to wait for transit.

Figure 2-2: Complete streets are intentionally designed around all potential users.

Strategic Benefits

The movement—supported by the Federal Highway Administration (FHWA), state DOTs, and MPOs—offers several community advantages:

- **Congestion Relief:** Provides viable alternatives to traffic congestion.
- **Livability:** Creates safer, more vibrant environments.
- **Environmental Impact:** Reduces negative environmental footprints.
- **Context Sensitivity:** Complements Context Sensitive Solutions (CSS) by aligning design with the specific needs of the facility's users.

⚠️ **Safety Constraint:** Street designers and transportation agencies have a fundamental responsibility to the public health, safety, and welfare to design, operate, and maintain the entire right-of-way for safe access.

Checkpoint Quiz

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1. **Approximately how many pedestrians and bicyclists die each year on U.S. roads?**
   a. 1,000
   b. 2,500
   c. 5,000
   d. 10,000

Answer: (c). Close to 5,000 pedestrians and bicyclists die each year on U.S. roads due to incomplete street characteristics.

Module 3: Flexibility in Design

Learning Objectives

By the end of this section, you will be able to:

- **Analyze** the technical factors that influence site-specific complete street design.
- **Apply** prioritization strategies for design elements in constrained right-of-way (ROW) environments.
- **Contrast** the outcomes of conventional demand-driven design versus the interdisciplinary complete street process.

Executive Summary: Successful complete street design requires balancing competing factors and prioritizing elements that meet the community's vision, particularly when right-of-way is limited.

Core Design Factors

There is no "one size fits all" approach. Designers must evaluate:

- **User Profiles:** Number and types of users.
- **Physical Constraints:** Available ROW, existing improvements, and utilities.
- **Context:** Land use, community desires, and available budget.
- **Operational Needs:** Parking and functional basis.

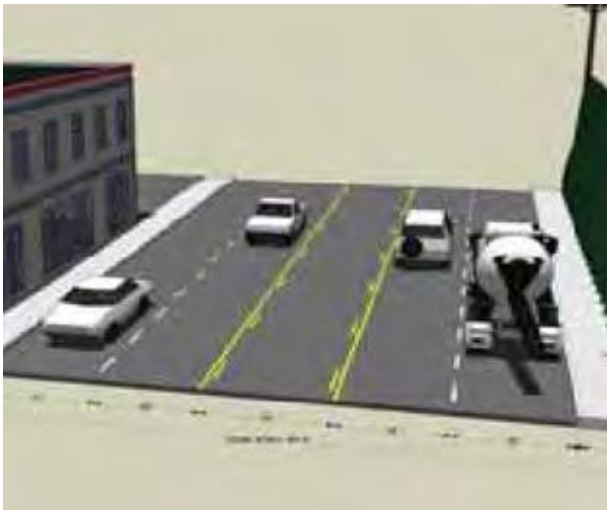

Figure 3-1: Varying cross-sections are sometimes necessary to help prioritize design elements when right-of-way is limited.

Purchase this course to see the remainder of the technical materials.