Designing Walkable Urban Thoroughfares

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Module 1: Foundation

Learning Objectives

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

- **Identify** the core principles of Context Sensitive Solutions (CSS) as they apply to urban thoroughfare planning.
- **Select** the appropriate design characteristics that define a walkable community.
- **Evaluate** the relationship between transportation facilities and their surrounding land-use contexts.

Executive Summary: This module introduces a paradigm shift in urban engineering—moving from the 20th-century model of separating mobility from social functions toward the restoration of complex, multimodal thoroughfares. By integrating **Context Sensitive Solutions (CSS)**, Professional Engineers can design walkable urban thoroughfares that balance technical capacity with community livability, safety, and economic vitality.

Purpose of This Report

This guidance addresses the widespread interest in improving both **mobility choices** and **community character**. It facilitates the restoration of the complex multiple functions of urban streets—integrating social and economic transactions with traditional mobility.

The report focuses on **urban thoroughfares** (arterials and collectors) within "walkable communities," such as compact neighborhoods, town centers, and urban cores. While based on the flexibility inherent in the AASHTO "Green Book," these guidelines prioritize environments where walking, bicycling, and transit are encouraged.

CSS and This Report

Context Sensitive Solutions (CSS) is a collaborative, multidisciplinary process involving all stakeholders to develop transportation facilities that:

- Meet the specific needs of users and stakeholders.
- Preserve **scenic, aesthetic, historic, and environmental** resources.
- Respect design objectives for **safety, efficiency, and multimodal mobility**.
- Integrate community values such as **livability and sense of place**.

Applying CSS principles allows practitioners to make informed decisions based on the **trade-offs** that frequently accompany conflicting needs between transportation and land use.

⚠️ **Safety Constraint:** In walkable communities, the "purpose and need" of a project must be defined early through stakeholder input to ensure that safety and mobility are addressed for **all users**, not just motor vehicles.

Objectives of this Report

The primary objectives of this technical guidance are to:

1. **Apply CSS principles** across network, corridor, and project development levels.
2. **Balance trade-offs** between user needs, land use, and community interests.
3. **Identify thoroughfare types** and design parameters specific to their context.
4. **Provide criteria** for thoroughfare elements that support walkability.

Walkable Communities

Walkable communities are urban places where walking is an efficient and desirable daily travel mode. This is achieved through a complementary relationship between transportation, land use, and urban design.

Key Principles for Walkable Communities

- **Fine-Grained Networks:** Allocation of right-of-way based on urban context.
- **Compact, Mixed-Use Environments:** Buildings and public spaces that support human and economic activity.
- **System-Wide Capacity:** Achieving throughput via **multimodal connectivity** rather than simply increasing the vehicular capacity of individual thoroughfares.
- **Context-Supportive Design:** Engineering thoroughfares to change as the surrounding urban character varies.

Characteristics of Walkable Communities

- Mixed land uses and relatively **compact densities**.
- Building entries fronting directly onto sidewalks (no parking buffers).
- **Pedestrian-scale** design detailed for those traveling at slow speeds.
- Highly connected, multimodal circulation networks with **small blocks**.

💡 **Design Tip:** Practitioners should use location as a **design control**. In walkable contexts, design decisions should consistently favor elements and dimensions that support pedestrian activity.

Applicability of this Recommended Practice

This guidance is primarily intended for:

1. **Preservation/Enhancement:** Projects in existing walkable communities.
2. **Transformation:** Projects where community goals call for a future walkable context.

Even in non-walkable contexts (e.g., business parks or residential subdivisions), these principles can improve **speed management**, transit integration, and cost savings in right-of-way acquisition.

Relationship to Other Guidance

This report supplements standard industry references. Most criteria are based on **AASHTO** design criteria but demonstrate how to apply flexibility for traditional urbanism.

⚠️ **Safety Constraint:** All designs must maintain consistency with the latest versions of the **Americans with Disabilities Act Accessibility Guidelines (ADAAG)** and the **Public Rights-of-Way Accessibility Guidelines (PROWAG)**.

Organization

The report is structured into three parts:

1. **Introduction:** Foundation and background.
2. **Planning:** Network planning, corridor planning, and CSS frameworks.
3. **Design:** Design process, controls, and specific guidelines for the **streetside**, **traveled way**, and **intersections**.

Table 1.1: Contents of This Report

Chapter Title	Material that is Addressed
Part 1: Introduction	
1—Foundation	The background behind this guidance and an overview of the principles of CSS.
Part 2: Planning	
2—Planning and Developing Context Sensitive Urban Thoroughfares	An overview of the transportation planning and project development process and how CSS principles are applied with these processes.
3—Network and Corridor Planning	An overview of thoroughfare network types, characteristics of successful networks and network design guidelines. An overview of the corridor planning process and the role of CSS.
4—A Framework for Walkable Urban Thoroughfare Design	An introduction into the design framework for context sensitive thoroughfare design, context zones, their characteristics and the features that create context and a description of thoroughfare types and their relationship with functional classifications, compatibility with context zones and general design parameters.

Part 3: Design	
5–Thoroughfare Design Process	A process for using this report to design thoroughfares, how to design thoroughfares within constrained rights of way and flexibility in the application of design criteria.
6–Thoroughfare Designs for Walkable Urban Areas	General design parameters for thoroughfare types, variations in the streetside and traveled way under varying conditions and example thoroughfare designs.
7–Design Controls	A discussion of the engineering controls and level of flexibility critical in context sensitive design, including design vehicle, roadway geometrics and design speed.
8–Streetside Design Guidelines	General principles, design considerations and detailed guidance for the design of the elements that comprise the streetside.
9–Traveled Way Design Guidelines	General principles, design considerations and detailed guidance for the design of the elements that comprise the traveled way.
10–Intersection Design Guidelines	General principles, design considerations and detailed guidance for the design of the elements that comprise multimodal intersections.

Who Should Use This Report

Intended users include transportation planners, traffic engineers, land-use planners, and design professionals.

Table 1.2: Intended Users and Responsibilities

User	Responsibilities
All Users	• Participate in preparing transportation plans; • Help establish community vision and project goals and objectives; and • Help develop and evaluate thoroughfare concepts, alternatives and impacts.
Transportation Planner	• Develops and evaluates long-range transportation plans; • Helps establish community vision and project goals and objectives; • Develops and evaluates thoroughfare concepts, alternatives and impacts; and • Works with public, stakeholders and multidisciplinary teams to integrate transportation and land use planning.
Traffic/Civil Engineer	• Prepares purpose and need for transportation projects; • Develops initial thoroughfare concepts and prepares detailed evaluations of these concepts; • Identifies design controls and parameters, constraints and trade-offs; • Works with public, stakeholders and multidisciplinary teams to resolve design challenges; and • Prepares preliminary and final engineering plans.

Land Use Planner	• Develops long-range land use plans; • Helps establish community vision and goals and objectives for neighborhoods and corridors; • Works with multidisciplinary team to establish and identify context; • Formulates land use policy that affects thoroughfare design; and • Establishes land use regulations (subdivision, zoning and so forth) that guide context.
Design Professional - Architect - Urban Designer - Landscape Architect	• Designs integral elements of the thoroughfare and its surrounding context including buildings, sites and streetscape features; • Works with public, stakeholders and multidisciplinary teams to resolve design challenges; and • Prepares environmental assessments; identifies impacts and mitigation measures.
Stakeholders - Elected Officials - Appointed Commissioners - Developers - Local, Regional and State Agencies - Citizens	• Provide local and regional input and leadership; • Provide funding and financing mechanisms for development of context and thoroughfares; • Have jurisdiction and approval authority over plans and designs; and • Work closely with the general public to achieve community acceptance of projects.

Continuum of Walkability

The "Continuum of Walkability" defines the level of pedestrian priority on urban thoroughfares:

- **Pedestrian places:** Significant pedestrian presence; vehicles may be prohibited.
- **Pedestrian supportive:** Moderate to significant pedestrian presence; mixed-use focus.
- **Pedestrian tolerant:** Areas that minimally accommodate pedestrians; vehicle dominant.
- **Pedestrian intolerant:** Little to no support for walking; vehicle dominant (e.g., freeways).

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