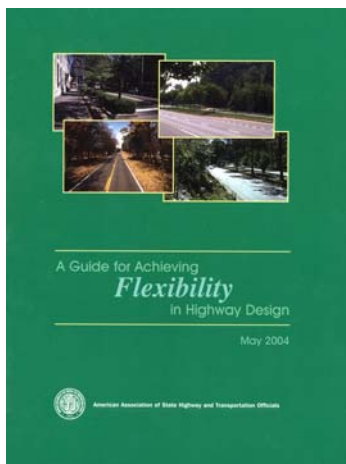


GUIDE FOR ACHIEVING FLEXIBILITY IN HIGHWAY DESIGN



American Association of State Highway and Transportation Officials (2004). *A Guide for Achieving Flexibility in Highway Design*. Washington, D.C.

ABSTRACT

The 117-page guide is intended to promote the incorporation of sensitive community and environmental issues into the design of highway facilities. It is organized to provide an overview and summary of key aspects of the highway project development process from initial planning through completion of construction plans. The introduction offers a brief overview of the history and principles of CSS, and its effect on the design professions.

Chapter 1—The Project Development Process

Chapter 1 addresses the overall project development process, including the major steps of planning through final design; the background, applicability and use of design criteria; differences among project types; and project design decision making. Successful projects suggest that the alternatives development and evaluation stage is where context sensitivity is achieved, and that early, continuous and meaningful input from the public must be emphasized.

The chapter emphasizes the flexibility of the design process, from such early decisions as design speed and level of service, through application of design criteria and alternatives development.

A discussion of design exceptions—using values outside the typical range of guidelines to avoid a conflict or constraint—is included, along with a discussion of the decision making process.

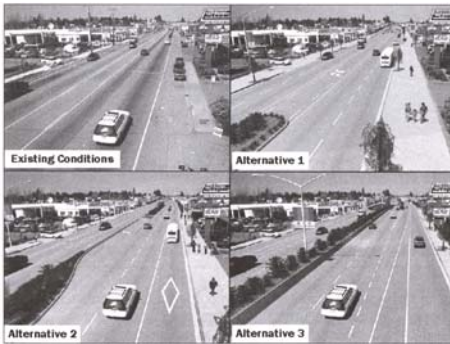
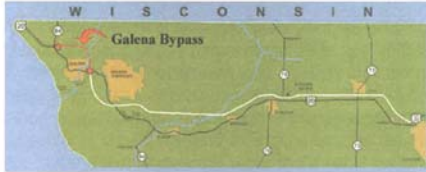
- Overview of the Process
- Philosophy of Geometric Highway Design
- Design Criteria and guidelines
- Highway Design Controls

- Speed—A Fundamental Input to Design
- Project Types
- Design Constraints
- Design Decision Making
- References



Galena Bypass Description

The Galena Bypass has the distinction of being the first section of US Route 20 "Glacier Shadow Freeway" for both its physical location and the funding of this project. The bypass starts at the Illinois Route 64 intersection with the existing US Route 20 Four-Lane that extends to East Duluth. As the bypass heads east it curves around the picturesque settlement of Galena, which existing US 20 skirted. It spans the Galena River and Old Sheperch Trail, and then dips enough to enjoy the city's historic center. The bypass terminates near the landmark site of Nevershoe Islands, completing its assigned task in about 7 miles.



Chapter 2—Context-Sensitive Solutions through Community Involvement

Chapter 2 outlines the processes, tools, and techniques through which agencies can develop an understanding of community interests and incorporate these into projects. Critical aspects of community involvement include beginning early and including these activities as part of planning, budget, and management—like any other critical task. The chapter includes specific techniques and references for public involvement programs.

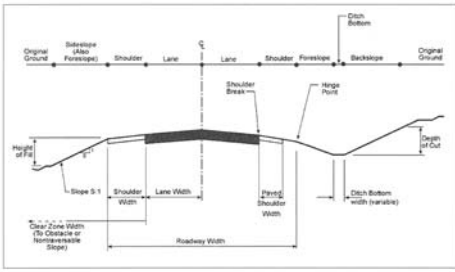
- Introduction
- Establishing Purpose and Need
- Conducting Project Scoping
- Building and Effective Public Involvement Program
- Planning and Conducting Public Meetings
- Role of the Design Professional in the Environmental Process Effective Public Involvement is Necessary to Produce Appropriate Outcomes References

Chapter 3—Highway Geometric Elements--Design and Safety Considerations for Context-Sensitive Project Solution

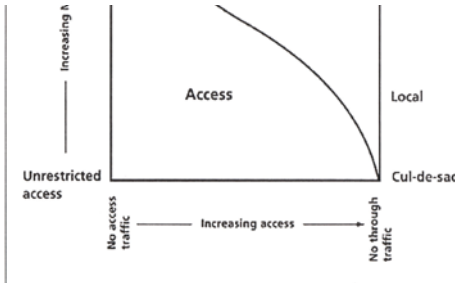
Chapter 3 is aimed at highway design professionals charged with the development and evaluation of highway alternatives. The emphasizes the importance for designers to understand the functional, operational and safety basis behind agency design criteria in order to promote flexible, creative decisions. To this end, the chapter provides an overview of key geometric elements and a summary of current knowledge regarding operational and safety effects of design.

Chapter 3 also addresses the relationship of concerns about safety and those of maintaining scenic character; balancing concerns like low-speed highway operation with safety and mobility objectives. Principles of traffic calming are provided, along with effective and ineffective techniques, appropriate applications, and suggestions on how to work with communities on traffic calming projects.

- Introduction
- Horizontal Alignment
- Vertical Alignment (Grades)
- Coordination of Horizontal and Vertical Alignment
- Sight Distance
- Cross Section Elements



- Bridges
- Intersections
- Access Control
- Pedestrian and Bicycle Facilities
- Traffic Calming
- Developing and Documenting Safety Sensitive Solutions References



Chapter 4--Legal Liability and Highway Design

This chapter addresses responsibilities of agencies and professionals, and clarifies the legal questions that have been raised about CSS. It includes a summary of how design professionals can realize design flexibility while protecting the public and their agency's legal interests.

Introduction

Overview of Tort Liability

Basic Principles of Tort Liability

Sovereign and Public Employee Immunity

Discretionary Function Immunity

Design Immunity

Absence of Decision Making

Design Decisions, Negligence and the Duty of Care

Importance of Fully Evaluating and Documenting Design Decisions What

Context Sensitive Design Practices will Reduce an Agencies Exposure to Successful Claims?

Appendix includes U.S. federal regulations on environmental protection affecting highway design.

SUMMARY Designed for professionals, this concise, well-organized guide offers an overview of key aspects of highway project development, with detailed suggestions on the public involvement process, highway geometrics and safety, and traffic calming.

KEY WORDS *Applicable Project Delivery Stages:* Administration, Planning, Design, Construction, Scoping

Applicable Transportation Professionals: Highway, Engineers, Structural Engineers, Planners, Urban Designers, Landscape Architects

Applicable Transportation Modes: Vehicular, Bicycle, Pedestrian

Transportation Topics: Access Control, Alignment, Clear Zone, Communication, Community, Cross-Section, Crosswalks, Curbs, Design Controls/Criteria, Flexibility, Geometrics, Grading, Medians, Open House, Partnerships, Process, Public Involvement, Public Meeting, Roadside Elements, Roles and Responsibilities, Rural Roads, Scenic Highways, Shoulder Width, Stakeholders, Technical Staff, Tort Liability, Traffic Calming, Urban Highways, Vegetation