

## **CHAPTER 3** **PLANNING THE SRA SYSTEM**

### **3.1 SRA PLANNING OBJECTIVES**

Development of comprehensive, long-range plans for the entire SRA network is necessary in order to implement the SRA system. These plans will identify both short-range and long-range improvements for each of the SRA routes. The following objectives should guide the planning process:

- **Determine the types of roadway improvements needed for each route including additional lanes, signalization and interchanges.**
- **Examine ways to enhance public transportation.**
- **Identify and protect needed rights-of-way.**
- **Manage access to SRA routes to improve through traffic movement and reduce conflicts.**
- **Coordinate land use and development projects with transportation improvements.**
- **Identify ways to accommodate the growth in commercial traffic.**
- **Accommodate necessary bicycle and pedestrian travel on the SRA route corridors.**
- **Identify potential environmental concerns.**

The plans are intended to be specific to each SRA route as designated in the 2010 Transportation System Development Plan. However, this does not preclude consideration during the planning process of alternative segments on a route where warranted by circumstances. Also, the planning process addresses the fact that not all transportation needs can be provided within the right-of-way of an SRA route, and that some types of travel may be better provided on parallel facilities.

### **3.2 SRA ROUTE TYPES**

Within the overall SRA network, there are significant differences in the roadway environment, which determine how different types of routes may function in the system. Three different types of SRA routes have been designated, corresponding to three different types of roadway environments:

- **Urban Routes**
  - **Suburban Routes**
  - **Rural Routes**
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**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**

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SRA routes located in densely urbanized areas typically are existing routes with minimal possibilities for roadway expansion, where improvements could be made to intersections, local transit facilities and low structural clearances. For routes in developing suburban areas, preservation of right-of-way, additional lanes on roadways, new connections to improve route continuity, and operational improvements such as signal coordination may be considered. In rural areas, preservation of right-of-way and controlled access would provide for movement of through traffic and accommodate future needs.

The designation of route types within the overall SRA system reflects the density of development within the different portions of the region. The projected density of households for the year 2010 was used as the criterion for defining density of development for the route types. The densities which correspond to each of these route types are:

- **Urban routes:** Densities over 5.0 households per acre by 2010.
- **Suburban routes:** Densities between 0.5 and 5.0 households per acre by 2010.
- **Rural routes:** Densities less than 0.5 households per acre 2010.

The areas for each route type are shown in *Figure 3.1*. Urban routes are located in the City of Chicago and adjacent portions of more densely developed suburbs such as Oak Park. Suburban route designations encompass most of suburban Cook and Lake Counties, all of DuPage County, and the more developed portions of McHenry, Kane and Will Counties. Rural routes are located in the outer portions of Lake, McHenry, Kane and Will Counties. Within each of the three areas, continuity of route type is maintained based upon the overall density of 2010 development.

The following are examples of each route type:

**Urban Routes**

- Michigan Avenue
- 55th Street
- Western Avenue

**Suburban Routes**

- Palatine/Willow Road
- Butterfield Road
- Illinois Route 59

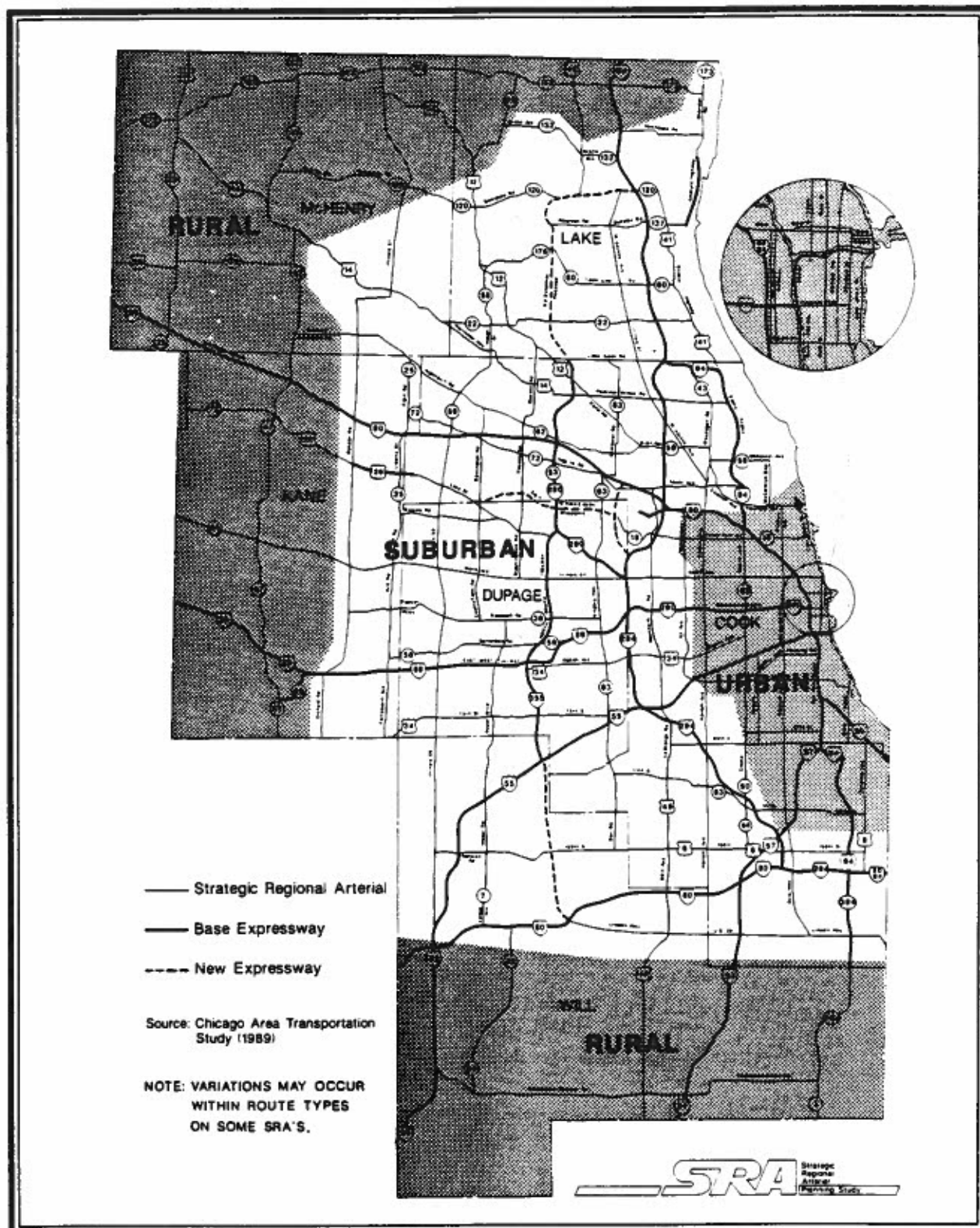
**Rural Routes**

- Illinois Route 173
- Peotone-Beecher Road
- Illinois Route 47

Each of the three route types has different characteristics of the existing roadway environment which affect the type and scope of potential future improvements. Typical existing characteristics for each route type – urban, suburban and rural – are shown in *Table 3.1*. Where existing characteristics on a particular route segment differ markedly from the typical situation, such as in a suburban central business district, consideration of special techniques may be required in the route planning process.

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**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**



**Figure 3.1 Route Types on the Strategic Regional Arterial System**

**SECTION 1: GENERAL  
CHAPTER 3: PLANNING THE SRA SYSTEM**

**Table 3.1  
Typical Existing Route Conditions**

<b>URBAN ROUTE</b>	<b>SUBURBAN ROUTE</b>	<b>RURAL ROUTE</b>
<b>Right-of-Way</b>		
• 60-100 Feet	• 100 Feet	• 100 Feet or more
<b>Developed Roadway</b>		
<ul style="list-style-type: none"> <li>• 4-6 Lanes 10-12' each</li> <li>• Total Width 44-80 feet</li> <li>• Curb &amp; Gutters</li> <li>• No Shoulders</li> <li>• Cross Streets 8-20 per mile</li> <li>• Occasional Center lane or Left-turn lane</li> <li>• On-street parking &amp; loading</li> <li>• Limited Off-street parking</li> <li>• Few Right-turn lanes</li> <li>• Traffic Signals 4-8 per mile</li> <li>• Continuous Sidewalk</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Lanes 12' each</li> <li>• Total Width 66-100 feet</li> <li>• Shoulders 0-10 feet, sometimes paved</li> <li>• Cross Streets 2-10 per mile</li> <li>• Continuous No Median, Center lane, or Median with turn bays</li> <li>• Curb cut(s) for each owner</li> <li>• No Parking loading, off-street required</li> <li>• Traffic Signals 1-5 per mile</li> <li>• Discontinuous Sidewalk</li> <li>• Curbs, gutters common</li> <li>• Some Right-turn lanes</li> </ul>	<ul style="list-style-type: none"> <li>• 2-4 Lanes 12-14' each</li> <li>• Total Width &lt; 60 feet</li> <li>• Shoulders 2-6 feet</li> <li>• Cross Streets <math>\leq 1</math>/mile</li> <li>• Few Medians or turn bays</li> <li>• Unrestricted Curb Cuts</li> <li>• No Parking, loading</li> <li>• Traffic signals <math>\pm 1-2</math> mile apart</li> <li>• No Sidewalk, Curbs</li> <li>• Some Right-turn lanes</li> </ul>
<b>Surrounding Uses</b>		
<ul style="list-style-type: none"> <li>• No Setback or limited setback</li> <li>• Residential, Commercial, Industrial, Recreational</li> <li>• Building/Land Ratio: <math>&gt;1.5/1.0</math></li> </ul>	<ul style="list-style-type: none"> <li>• 20-35' Building Setback</li> <li>• Residential, Commercial, Industrial, Recreational</li> <li>• Building/Land Ratio: <math>0.2-1.0/1.0</math></li> </ul>	<ul style="list-style-type: none"> <li>• Large Setback</li> <li>• Agricultural, Residential, Recreational</li> <li>• Building/Land Ratio: <math>&lt;0.01/1.0</math></li> </ul>
<b>Posted Speed</b>		
• 25-35 mph	• 35-50 mph	• 55 mph
<b>Users</b>		
<ul style="list-style-type: none"> <li>• 25,000-65,000 Vehides per Day</li> <li>• 8-10% Peak Hour Volume</li> <li>• 55/45 Directional Split</li> <li>• Local Freight</li> <li>• High Transit Volume</li> <li>• Bicycle Usage</li> <li>• High Pedestrian Volume</li> </ul>	<ul style="list-style-type: none"> <li>• 15,000-55,000 Vehides per Day</li> <li>• 8-10% Peak Hour Volume</li> <li>• 55/45 Directional Split</li> <li>• Through &amp; Local Freight</li> <li>• Variable Transit Intensity</li> <li>• Bicycle Usage</li> <li>• Variable Pedestrian Volume</li> </ul>	<ul style="list-style-type: none"> <li>• 5,000-15,000 Vehides per Day</li> <li>• 8-10% Peak Hour Volume</li> <li>• 55/45 Directional Split</li> <li>• Through Freight</li> <li>• Farm Vehicles</li> <li>• No Significant Local Freight or Transit</li> </ul>

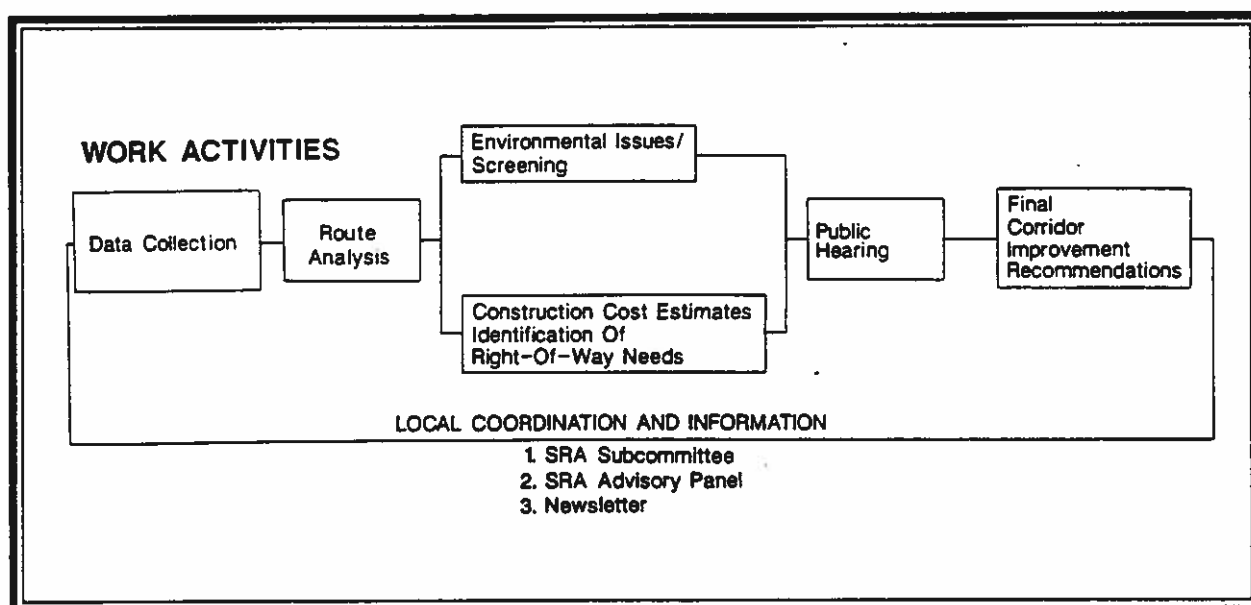
**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**

### **3.3 THE SRA PLANNING AND IMPLEMENTATION PROCESS**

The SRA planning process has two parts:

The first part consists of developing **Recommended Design Features and Techniques** for each of the three SRA route types. This report documents the results of the first part to be used in developing the route-specific plans.

The second part consists of preparing specific **Route Studies** for each SRA route. The plans will recommend comprehensive short-range and long-range improvements for each route, through the work program (See *Figure 3.2* .).



**Figure 3.2 The SRA Route Studies Work Program**

The principal activities in the **Route Studies** work program are summarized below.

**Data Collection/Evaluation.** The SRA planning process is designed to efficiently use available data. For each route, data is assembled from right-of-way information, roadway plans, traffic volume projections, transit information, bicycle usage, adjacent development characteristics, accident data, environmental studies and other sources, and is analyzed to establish current conditions, constraints and improvement needs.

**Route Analysis.** Possible improvements for the SRA route are determined by incorporating the recommended design features in specific configurations for each segment of the overall route. These configurations will include alternative designs and techniques where necessary to accommodate local conditions or constraints. The timing of the recommended improvements, whether long-range or short-range, will also be identified.

**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**

**Environmental Issues/Screening.** While the SRA planning process does not include detailed environmental assessments or analysis of specific mitigation measures, a screening process will identify significant environmental conditions along each route. The results of this process will be used to evaluate improvement alternatives, and will also serve as an early indicate of environmental issues for future design studies.

**Construction Cost Estimates/Identification of Right-of-Way Needs.** Construction cost estimates for each route segment will be prepared, both for short-range and long-range improvements. Right-of-way needs to accommodate recommended long-range improvements will also be identified.

**Local Involvement and Coordination.** Throughout the SRA route planning process, the involvement of local and regional agencies is an important consideration. Information and coordination efforts include forming Advisory Panels for each SRA route, which will work with IDOT during the planning process. A regular newsletter for each Panel will inform members about the SRA program and ongoing route studies. A public hearing in an open house format will also be conducted for each route.

**Final Route Improvement Plan/Report.** As the final step in the planning process, a report for each SRA route will document the recommended improvements and findings.

The second part of the SRA planning process is to be accomplished over the next five years, with approximately 20 percent of the total system included in each year. Together, the route-specific studies will result in a comprehensive plan for the entire network. As planning for each route is completed, the plans will be used to help program the scope and timing for improvements along that route. For State routes, once an SRA improvement is included in the IDOT Five-Year Program, the process of implementation follows the process shown in *Figure 3.3*. For SRAs which are not State routes, a similar process could be followed under county or municipal jurisdiction. The SRA studies are the Pre-Phase I stage.

PRE-PHASE I (SRA ROUTE STUDIES)	PHASE I/ DESIGN REPORT	PHASE II	PHASE III	PHASE IV
<u>PLANNING</u>	<u>PRELIMINARY DESIGN</u>	<u>FINAL DESIGN</u>	<u>CONSTRUCTION</u>	<u>POST CONSTRUCTION</u>
<ol style="list-style-type: none"> <li>1. Data Collection</li> <li>2. Test Alternatives</li> <li>3. Local Coordination</li> <li>4. Environmental Screening</li> <li>5. Recommend Improvements</li> <li>6. Public Hearing</li> </ol>	<ol style="list-style-type: none"> <li>1. Preparation of Preliminary Plans</li> <li>2. Public Involvement</li> <li>3. Environmental Studies/Mitigation</li> <li>4. Public Hearing</li> </ol>	<ol style="list-style-type: none"> <li>1. Preparation of Contract Plans</li> <li>2. Community Coordination</li> <li>3. Environmental Mitigation</li> </ol>	<ol style="list-style-type: none"> <li>1. Implementation</li> <li>2. Community Coordination</li> </ol>	<ol style="list-style-type: none"> <li>1. Environmental Monitoring</li> <li>2. Land Development/ Access</li> </ol>

**Figure 3.3 The SRA Implementation Process for Routes Under IDOT Jurisdiction**

**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**

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### **3.4 BICYCLE ACCOMMODATION ON SRAS**

Since the SRA system is generally intended to accommodate a significant portion of long-distance, high-volume automobile and commercial vehicle traffic, SRAs will not be conducive to recreational bicycling and travel by the novice or inexperienced cyclist. Therefore the system will not be considered as part of a bicycle network with special accommodations for novice and inexperienced cyclists. However, bicycle usage is typical on urban and suburban SRA routes, as noted in *Table 3.1* of this report. This is primarily due to the number of destinations on the SRA segments which are accessible only by travelling on the SRA. Cyclists of average or greater skill level, i.e. those comfortable riding in traffic, will use the SRAs to reach these destinations, with or without the presence of a designated space for bicyclists. They are interested in direct, convenient routes for their utilitarian travel. The recommendations contained within this report for the accommodation of bicycles on SRAs focuses on the safe accommodation of utilitarian trips to be made by cyclists of average or greater skill level. The recommendations are compatible with AASHTO's 1991 Guide for the Development of Bicycle Facilities adopted by IDOT.

### **3.5 HOW TO USE THE REPORT**

This report provides recommended design standards and criteria to be used in developing route-specific plans for the SRA system. Each section of the report provides guidance in a specific area for SRA planning:

#### **SECTION ONE: Identifying the Appropriate Route Types**

The type of route determines the appropriate design standards and techniques. Section 3.2 in this chapter identifies three types of SRA routes – urban, suburban and rural. *Figure 3.1* in this chapter is a map of the total SRA system with specific areas marked for each of the three types. From this map the type of route can be determined. For example, Pulaski Road is classified as an urban route; Illinois Route 60 (Town Line Road) is classified as a suburban route; and Peotone-Beecher Road is classified as a rural route. Some longer routes may involve more than one route type. Illinois Route 64 (North Avenue), for example, has urban, suburban and rural segments.

#### **SECTION TWO: Determining Recommended Designs and Features**

Recommended Designs and Features are given for each type of route:

- **Urban Routes in Chapter 4**
- **Suburban Routes in Chapter 5**
- **Rural Routes in Chapter 6**

The first part of each Chapter includes the following:

- **Typical Recommended Cross Section**
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**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**

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- **Table of Desirable Route Characteristics**
- **Typical Route Segment in Plan View**

Together, these elements define the basic criteria for the route type.

The second part of each chapter provides more detailed information about the specific design features including:

- **Signalization**
- **Intersection Improvements**
- **Add Lanes**
- **Bus Service**
- **Access Control Concepts**
- **Median Control**
- **Structural Clearance Improvements**
- **Roadway Design Criteria**
- **Pavement Marking**
- **Drainage**
- **Bicycle Accommodation**

The third part of each chapter provides information on:

- **Criteria for Using Special Techniques**
- **Typical Environmental Considerations**

**SECTION THREE: Using Techniques for Special Circumstances**

Because each SRA route is different, the desired configuration for each route will also differ. Not only are rural routes different from suburban, and suburban routes different than urban, but routes which might all be classified as suburban may have very different characteristics. Existing rights-of-way, roadway features, adjacent land use and access characteristics vary from route to route, and could also change from one section to another along any given route. Working within different constraints imposed by the conditions along the SRA routes suggests that options need to be available in planning the SRA system. These techniques for special circumstances are also defined for each route type.

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**SECTION 1: GENERAL**  
**CHAPTER 3: PLANNING THE SRA SYSTEM**

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- **Urban Routes in Chapter 7**
- **Suburban Routes in Chapter 8**
- **Rural Routes in Chapter 9**

Each of these chapters defines techniques to be considered where the recommended criteria cannot be applied or where special design features may be desirable such as:

- **Intersections with other SRAs, expressways, tollways, or rail lines**
- **Locations of environmentally sensitive uses (schools, hospitals, parks)**
- **State or other jurisdictional boundaries**
- **Designated future expressway or rapid transit corridors as proposed in the 2010 Transportation System Development Plan**
- **Locations of existing rail or bus transit stations**
- **Locations of inadequate or excess right-of-way**

The circumstances where each of the special techniques or design features could be applied are cross-referenced to Chapters 4, 5 and 6 on Recommended Designs and Features.

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