Chapter 4
STREETSCAPE DESIGN

About this Chapter

This chapter describes a **context-sensitive design approach** for streetscapes, and provides various design alternatives that can be used to retrofit the SR 108 Corridor (Corridor) based on the communities' priorities for **complete street enhancements** and still ensure adequate level of service. The chapter first introduces the concept of context-sensitive design, followed by a discussion of Caltrans **Main Street** design philosophy and guiding principles. A description of how the existing context varies along the Highway as it passes through Modesto, Riverbank, and Oakdale is provided to understand the context for design. Then, different priorities to be considered in streetscape enhancements are discussed before presenting the design alternatives. Finally, since SR 108 runs through the middle of established communities, with schools and neighborhoods on either side of the Corridor, information is presented to provide decision makers with a general set of guidelines for implementation of this Plan in relation to vehicle speeds along the highway.

CONTEXT-SENSITIVE DESIGN

One size does not "fit" all. This is particularly true when thinking of a streetscape. Streets drive our mobility choices, but they also define business districts and neighborhoods, portray a community's image, and embody the community's values. Therefore, it is critical to pay careful attention to streetscape design, features, and amenities so that streets complement the community's context and allow community goals to be met in the future.

Caltrans has acknowledged the need for a more flexible "context-sensitive approach" to design that reflects the fact that State Highways, while primarily focuses on the movement of goods and people, may need to function as a local street while passing through communities. The main intent of context-sensitive design approach is to meet transportation goals in harmony with community goals and natural environments.

WHAT IS A MAIN STREET?

Chapter 80 in *Caltrans Highway Design Manual* (Application of Design Standards) defines two basic Place Types for the highway context in terms of surrounding built and natural environment, and population base – urban and rural. The population base in the 3 Subject Cities varies (per 2010 Census: Modesto had 201,165 people, Riverbank had 22,678 people, and Oakdale had 20,675 people). However, in each City, there is the potential for SR 108 to function as more of a main street.

The Main Street Place Type (rural vs. suburban vs. urban) is defined by the surrounding community and the immediate built environment. Caltrans recognizes that transportation improvements along Main Streets need to consider sometimes competing priorities, which for SR 108 include public safety, aesthetics, noise, water quality, economic development, and traffic movement.

Figures 4-1 and 4-2 illustrate this balancing of priorities and are adapted from Caltrans 2013 report on *Main Street, California: A Guide for Improving Community and Transportation Vitality.*

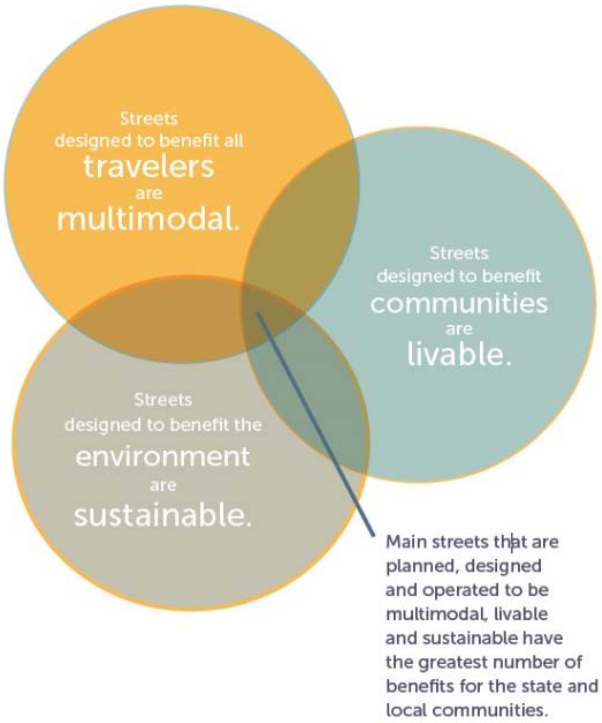


Figure 4-1: Main Street Concept
Source: Caltrans, 2013.

Principle 1

Flexibility in Design

State highway main streets must accommodate the circulation of the local community, as well as regional and statewide travel demands.

Flexibility should be allowed in applying design standards that respond to the project location context and tailor the design, as appropriate, to the site, while maintaining safety.

Principle 2

Partnerships: Caltrans, Communities and Stakeholders

Shared decision making and collaborative efforts can streamline the process of finding mobility solutions that are responsive to the local context, serve community needs, and deliver adequate regional transportation service.

Collaborative negotiations should address potential options for funding, maintenance responsibilities, and ownership.

Principle 3

Main Streets for All

The term "complete streets" describes the incorporation of multi-modal principles into the physical layout of roadways and associated facilities, such as sidewalks, crosswalks, and bike lanes.

Complete streets are planned, designed, operated, and maintained to provide mobility for all relevant users, including those with disabilities, pedestrians and bicyclists, and public transit users.

Principle 4

Livable Main Streets

Roadways should be viable public places that are inviting, accessible, and contribute to a unique identity that also enhances the local quality of life.

Main streets should contribute to improved public and environmental health and enhance economic development opportunities.

Principle 5

Sustainable Main Streets

A sustainable street system provides travelers the freedom and comfort to select the mode of travel that best suits their needs, while supporting local and regional land use and transportation plans. Replacing single-occupant driving trips with walking, bicycling, or taking public transit has numerous environmental, economic, and public health benefits. Streets can also be designed, constructed, and operated to include techniques or materials that support sustainability.

Figure 4-2: Guiding Principles for Community Main Streets that are also State Highways

Source: Caltrans, 2013.

EXISTING CONTEXT

The Corridor was subdivided into segments that share some similarities with respect to predominant land uses, design, roadway widths, and general character of the surrounding built environment. These segments with shared characteristics are called "Corridor Typologies." See Figures 4-3 to 4-5.

MODESTO

LOWER MCHENRY (DOWNTOWN TRANSITION)

This Corridor Typology extends from the Five Points area on the south to Roseburg Avenue on the north. This area has a mix of commercial service and retail uses today on relatively shallow and mostly narrow parcels. Most parcels in this area have a depth of less than 200 feet. Very few have a depth of more than 300 feet. The public right-of-way associated with Lower McHenry is narrow, relative to other segments. Here, the right-of-way is less than 86 feet wide. South of Hintze Avenue, the right-of-way is approximately 80 feet wide.

Lower McHenry could accommodate horizontal and perhaps even vertical mixed-use development in the future, with retail, service, office, and compact residential uses transitioning in and other uses transitioning out, as property values increase. Lower McHenry could – in the land use mix and urban design character – serve as an "extension" of Downtown Modesto, with housing opportunities for Modesto Junior College students, young professionals, and seniors. In addition to commercial service, retail, and compact housing options, Lower McHenry could also accommodate office development, including government offices.

As with other sections of the Corridor, the scale, orientation, and design of development will be important relative to the existing, adjacent neighborhoods. This is a matter of compatibility – not only to ensure against disruption to existing residential areas, but also to create an environment that attracts retail and commercial service uses that better match the needs of adjacent residents.

MIDDLE MCHENRY (MIXED USE)

This Corridor Typology extends from Roseburg Avenue on the south to Briggsmore Avenue on the north. Here, the parcel sizes vary and shapes are irregular, but for the most part, parcels are larger and deeper than those in Lower McHenry. Between Orangeburg Avenue and Roseburg Avenue, the predominant use is retail commercial and lodging, with parcels on the east side having depths of approximately 600 feet. The right-of-way is between 84 and 93 feet wide along this section of McHenry Avenue.

Retail is the predominant use for properties with highway frontage, but there is a concentration of medical offices in this area, as well, particularly between Orangeburg Avenue and Granger Avenue. Doctor's Medical Center located just west of the highway corridor, serving as the anchor. Medical offices extend about 800 feet east of McHenry Avenue (immediately east of the multi-story glass office building at 1524 McHenry is an imaging office at 157 Coolidge Avenue, located approximately 763 feet east of McHenry). McHenry Village, a major retail center, is located at the southeast corner of McHenry Avenue and Briggsmore Avenue. Single family development is located east and west of the highway corridor, but is set back from the highway further, compared to residences along Lower McHenry. Some small-scale multi-family development is located east of McHenry Avenue. This area could accommodate a mix of office and commercial development, with compact residential development carefully located and designed to ensure compatibility and salability.

Upper McHenry (Large-Scale Commercial)

This Corridor Typology extends from Briggsmore Avenue on the south to the City limits. Larger-scale commercial retail uses are located on larger parcels on Upper McHenry. Here, most of the parcels have depths of 350 feet or more, which may help create short-term opportunities for reuse and development. Several sites have depths of 600 feet or more. The right-of-way along this section is at least 105 feet wide, with most areas having a right-of-way width of approximately 110 feet.

There are multi-family developments, as well as single-family residences on both sides of McHenry Avenue through this section. Although Upper McHenry is predominantly commercial retail today, there could be opportunities for mixed-use development on vacant and underutilized properties.

Existing conditions along Lower, Middle, and Upper McHenry.

RIVERBANK

WEST PATTERSON (COMMERCIAL MIXED USE)

This Corridor Typology is located between the western City limits and Jackson Avenue. The right-of-way is approximately 115 feet wide in this segment and appears to narrow as SR 108 transitions from Patterson Road to Callander Avenue. This area is developed with large-scale commercial retail and service uses, with some office and light industrial properties in the central and eastern portions. Most of the commercial parcels in this area range between depths of 350 feet to 500 feet. West of Oakdale Road and south of the highway, there is a single-family neighborhood located behind a continuous sound wall where the City does not anticipate land use change. Several properties within this section are vacant or underutilized and most of this section is characterized by the City's General Plan as an "Infill Opportunity Area." In this area, the City is promoting reinvestment, redevelopment, and revitalization, which may include compact residential development, as well as commercial and office uses. According to the City's General Plan, "it is anticipated that the dominance of roadways and surface parking in the western portion of the Infill Opportunity Area would be reduced with the application of more pedestrian- and bicycle-friendly concepts," such as those illustrated in this Plan.[1]

CALLANDER CURVE (DOWNTOWN TRANSITION)

This Corridor Typology is located between Jackson Avenue and 1st Street. The right-of-way narrows substantially to approximately 80 feet wide east of Jackson Avenue. Parcel sizes become smaller (200 feet and less in depth) and the land use mix changes as the highway curves to the north and then to the east. There are light industrial uses, underutilized properties, along with some smaller-scale commercial retail and service uses in this stretch. St Frances of Rome church is located at the point where Callander Avenue turns to the east and crosses over the Burlington Northern Santa Fe railroad tracks. A former cannery site, the single largest reuse opportunity site in Riverbank, is located south of the highway at this point.

ATCHISON (DOWNTOWN)

This section is located between 1st Street and the eastern City limits, with an approximate right-of-way of 80 to 85 feet. There are small and very narrow parcels along Atchison Avenue through the downtown area (with an average parcel depth of 100 feet and less). Not counting the Cardozo Middle School site, the average property size in this section is approximately 1/4 acre. Commercial retail and service uses are predominant, but there are also some offices and east of 4th Street, there are several residences.

[1] City of Riverbank. 2005-2025 General Plan. Page LAND-14.

OAKDALE

WEST F STREET CORRIDOR (MIXED USE)

This Corridor Typology is between the western City limits and Stanislaus Avenue/South Wood Avenue. South of the highway, parcels are square and rectangular, but the orientation of the Highway makes for irregular parcel shapes north of F Street. The right-of-way varies between approximately 80 and 125 feet wide and the highway has four lanes east of Lee Avenue and two lanes west of this point (with a center turn lane).

South of the highway, in the western portion of this segment, there is a single-family residential development located behind a sound wall, where the City does not anticipate land use change (not including the Crane Road intersection, where the City is planning for large-scale commercial development). North of the highway, there are apartments, retail and commercial services, single-family housing, and vacant and underutilized properties. The City's General Plan indicates that for this part of the corridor, the City will promote retail, offices, services, higher-density residential development, mixed-use developments, and potentially senior housing and/or medical-related uses in the area near the Oak Valley Hospital (around Oak Avenue).

F STREET HISTORIC TRANSITION CORRIDOR (DOWNTOWN TRANSITION)

This Corridor Typology is between Stanislaus Avenue/South Wood Avenue and 1st Avenue. The right-of-way is approximately 80 feet in width. Parcels sizes become smaller in this section and most properties are developed, with relatively few vacant opportunity sites. There is a diverse array of land uses, including commercial service and retail, office, civic, and residential, although some homes have been converted to commercial use. The General Plan indicates the City's intent to promote development of retail, offices, services, higher-density residential development, and mixed-use development, particularly in the eastern portion of this section near Downtown.

DOWNTOWN CORRIDOR (DOWNTOWN)

This Corridor Typology is located between 1st Avenue and North 8th Avenue. The right-of-way width in this section is approximately 80 feet. Parcel sizes are small here and are mostly developed with retail and commercial services, although there are some offices and civic uses. Buildings are constructed close to, or at the front property line. The "Central Business District" land use designation applies to the area along the corridor from Laurel Avenue/Gilbert Avenue to North 8th Avenue. According to the General Plan, the City wishes to promote additional development of retail, services, offices, restaurants, entertainment, higher-density residential, mixed-use development, cultural attractions, and City administrative uses.

East F Street Corridor (Commercial Mixed Use)

This section is between 8th Avenue and the eastern City limits, where the Highway has four lanes (with a center turn lane) and the right-of-way is approximately 100 feet wide. Predominant uses are commercial retail and services. The average size of properties with frontage in this section is approximately 1.7 acres. Many buildings are set back from F Street and large surface parking fields have been developed between the buildings and the highway. The General Plan indicates that the City will promote of retail, offices, services, traveler-oriented uses, automobile sales and services, and higher-density residential and mixed-use development in this area. North-south connectivity in this area is extremely limited.

Existing street sections in Oakdale.

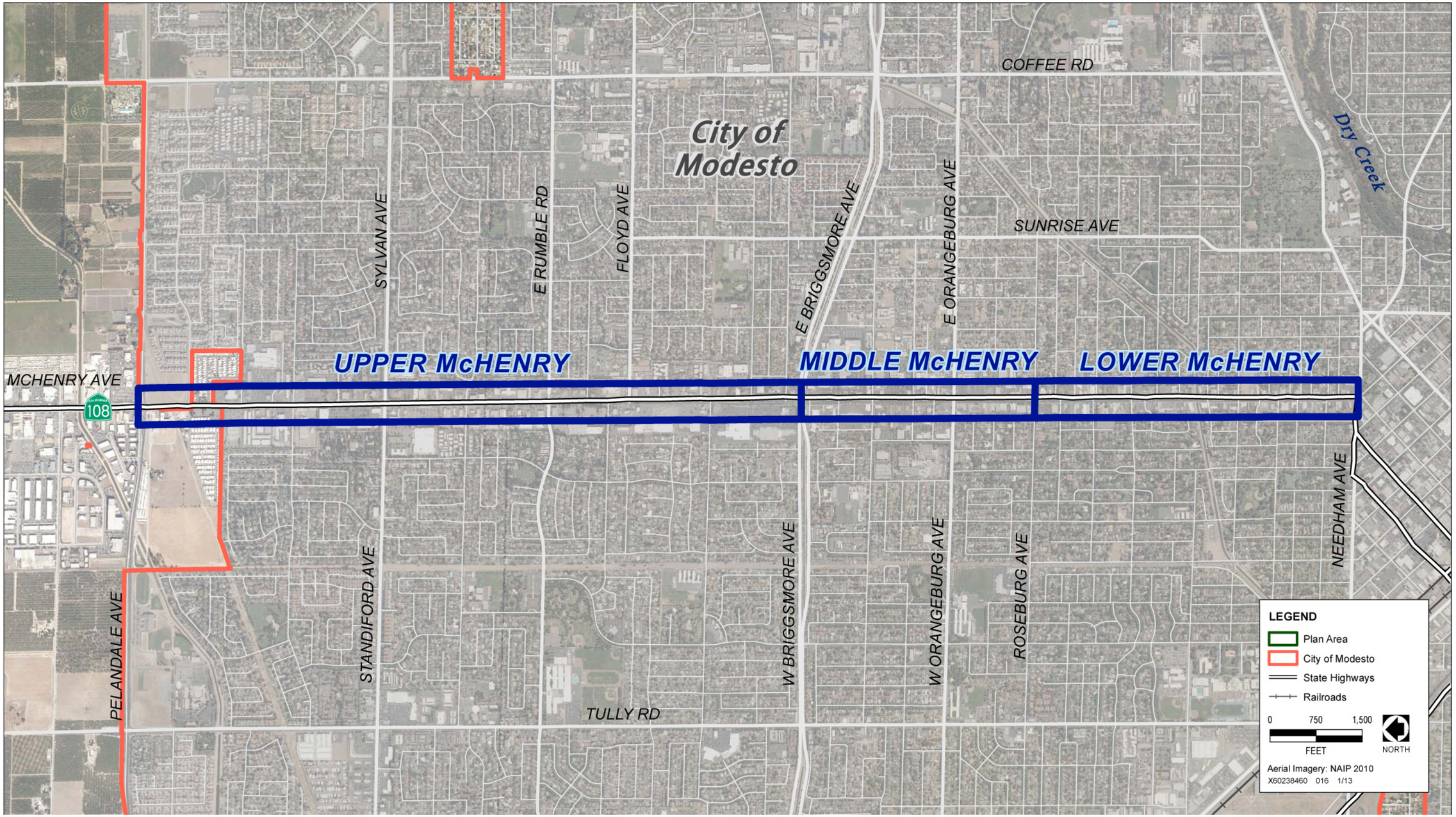


Figure 4-3: Corridor Typology in Modesto

Source: AECOM, 2014

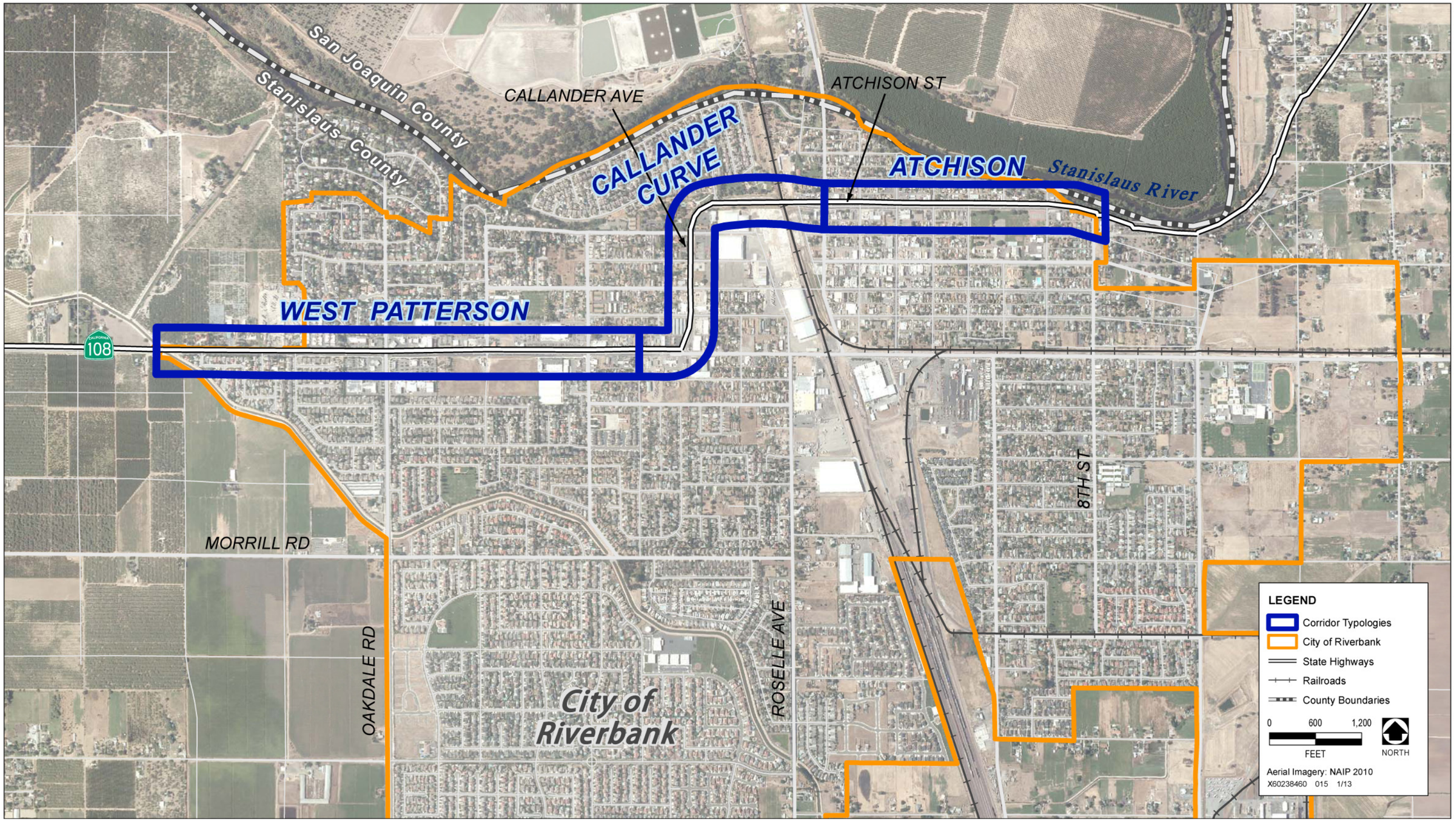


Figure 4-4: Corridor Typology in Riverbank
Source: AECOM, 2014

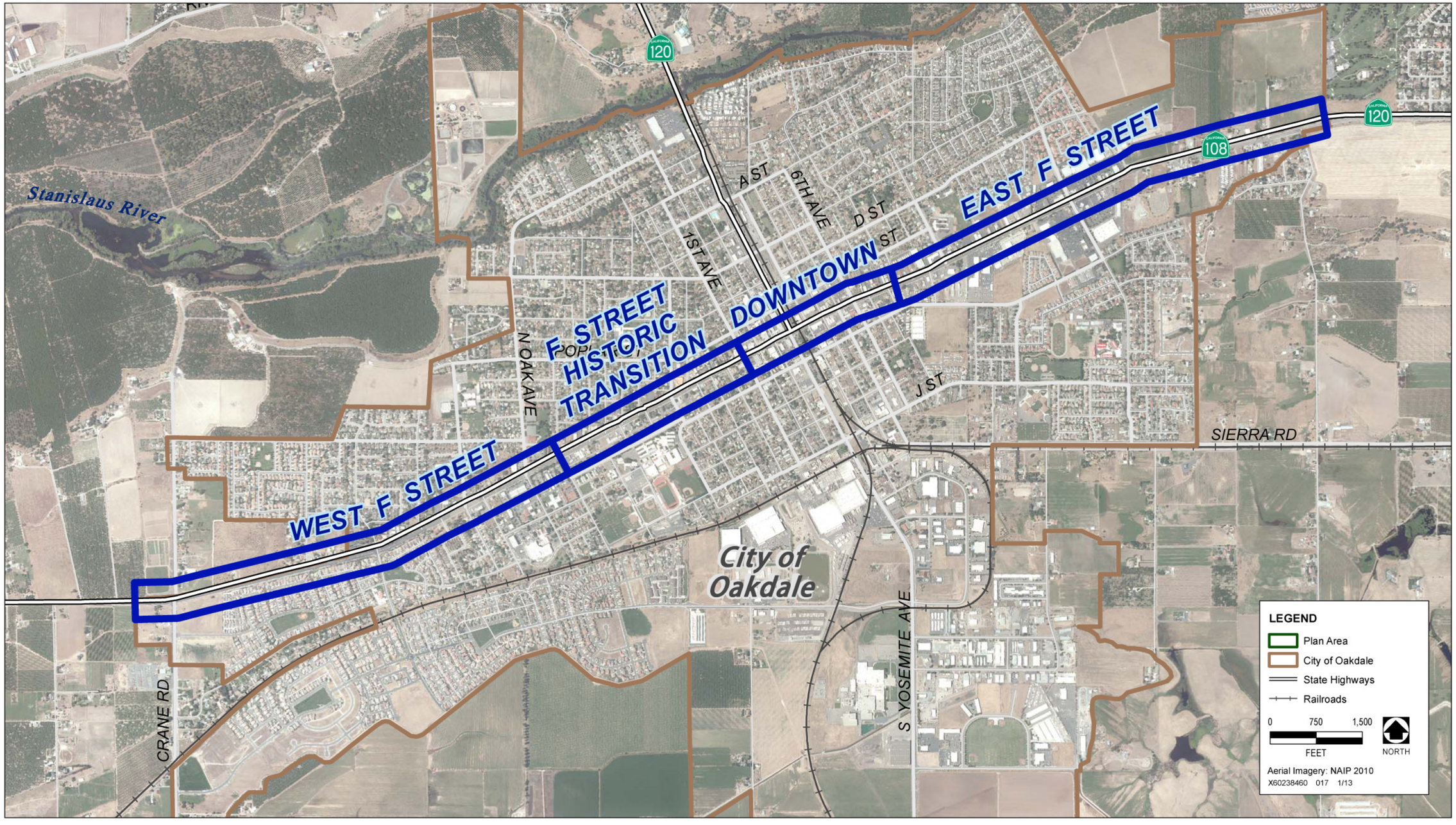


Figure 4-5: Corridor Typology in Oakdale

Source: AECOM, 2014

MAIN STREET DESIGN GUIDANCE

A Main Street should be designed to serve pedestrians, bicyclists, businesses, and public transit with motorized traffic traveling at speeds less than 40 miles per hour. Caltrans modified the standards in the Highway Design Manual to be applicable for Main Streets, such as the SR 108 Corridor. For example, the design standards for Main Streets are more relaxed in terms of narrower lane widths, pedestrian- and bike-friendly enhancements, and landscaping. Moreover, Caltrans has been an active participant in the dialogue related to design of complete streets in major cities, specifically related to the NACTO Urban Street Design Guide[2], and is further relaxing standards to encourage multimodal design concepts. Most of these modifications are driven by the fact that main streets operate at lower speed levels and function primarily as a local street for the community. Therefore, there is an emphasis for allowing design exceptions to meet community context and priorities.

Figure 4-6, 4-7, and 4-8 show posted speed limits along the Corridor.

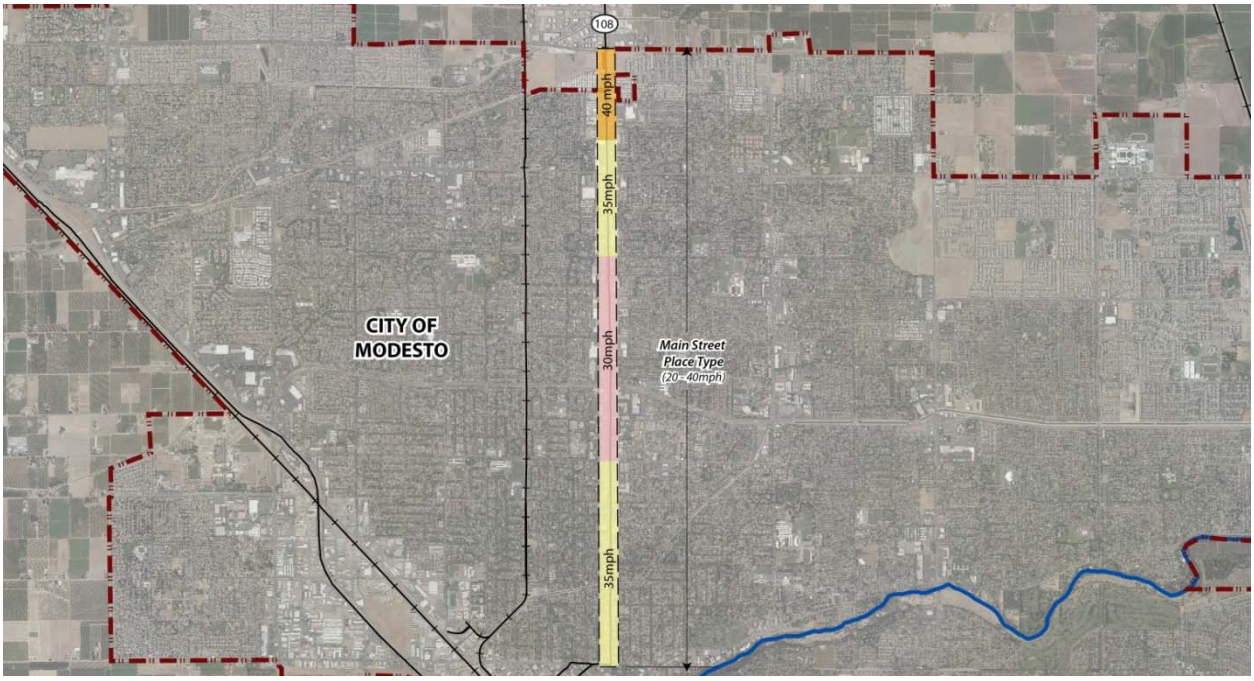


Figure 4-6: City of Modesto, Posted Speed Limits along SR 108

[2] For more detailed information regarding the NACTO Urban Street Design Guide see http://nacto.org/usdg/

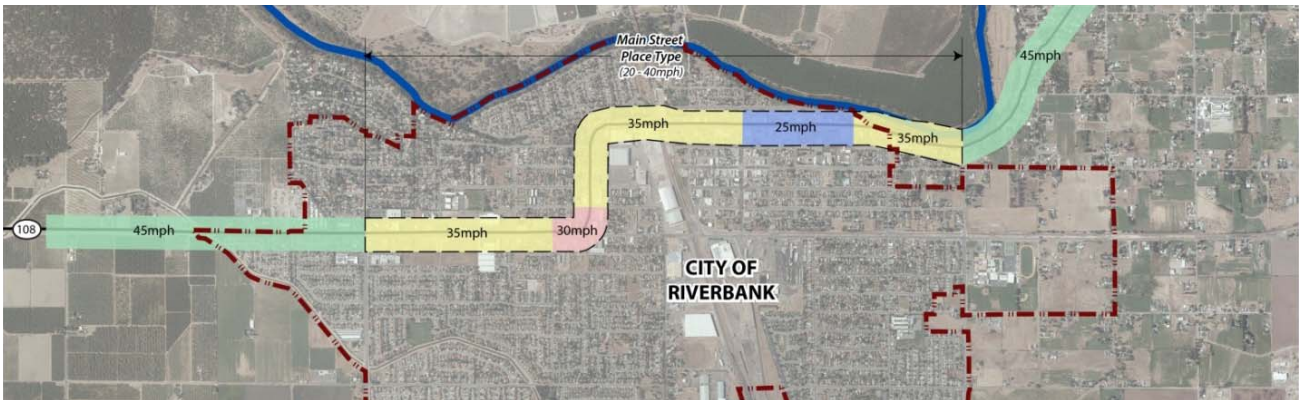


Figure 4-7: City of Riverbank, Posted Speed Limits along SR 108

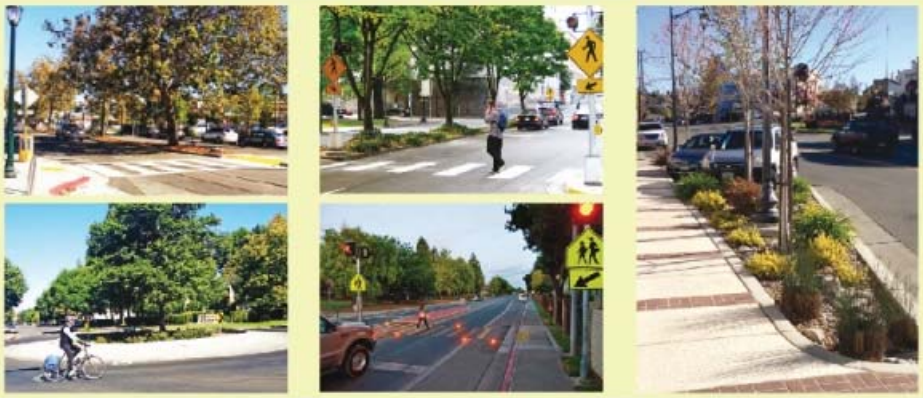
Figure 4-8: City of Oakdale, Posted Speed Limits along SR 108

Updated Design Standards from the Highway Design Manual: (detailed list in the Appendix)

- Minimum lane width shall be 11 feet.
- Minimum width of a sidewalk should be 5 feet between a curb and a building, when separated by a planter strip.
- Minimum median width for multi-lane conventional highways should be 18 ft.
- No clear recovery zone, which would not allow built or landscaping encroachments both horizontally and vertically, is required.
- In main street areas, or near schools and bus stops with pedestrians present, pedestrian facilities should be constructed.
- The minimum vertical clearance of a pedestrian undercrossing should be 10 feet.
- The minimum Class II bike lane width shall be 4 feet, except where:
    - Adjacent to on-street parking, the minimum bike lane should be 5 feet.
    - Where posted speeds are greater than 40 miles per hour, the minimum bike lane should be 6 feet.

Balanced Main Street Roadways and Intersections

- Design Speed
- Number of Traffic Lanes
- Traffic Lane Width
- Raised Median Islands
- Pedestrian Refuge Islands/
- Pedestrian Crossing Islands
- Mid-block Crossings
- Curb Extensions or Bulb-outs
- Advance Stop or Yield Lines
- Crosswalk Markings
- Evaluating Intersection Design
- Roundabouts
- Signals and Beacons
- Motor Vehicle Parking



Design for Bicyclists

- Shared Traffic Lanes
- Shared Lane Markings (Sharrows)
- Bike Lanes
- Green Colored Pavement for Bike Lanes
- Bike Lanes adjacent On-Street Parking
- Bike Lanes at Intersections
- Bike Routes and Paths
- Bike Parking
- Signs for Bicycle Facilities
- Bicycle Access During Construction
- Drainage Grates

Design for the Pedestrian Realm

- Accessible Main Streets
- Sidewalks
- Pavement Treatments at Intersections
- Street Landscaping
- Street Trees
- Banners and Decorations
- Street Lighting
- Street Furnishings
- Transportation Art and Community Identification
- Gateway Monuments

Connections to Public Transit

- Transit-only Lanes
- Curb-side Stops or In-lane Stops
- Bus Bulbs
- Bus Bays
- Transit Stops at Intersections or Mid-block Locations
- Mixed Flow or Bus-only Turn Lanes
- Transit Stop Amenities
- Transit Signal Priority
- Queue Bypass Lanes

Figure 4-9: Design Considerations for Livable Main Streets

Source: Caltrans, 2013.

PROPOSED STREETSCAPE CONCEPTS

Four types of streetscapes that are representative of the right-of-way widths along the Corridor were selected for preparing alternative streetscape design concepts. The design concepts for each right-of-way category show a range of streetscape design approaches that may be suitable for each locational context and reflect the community's needs and priorities.

The four street section categories based on the Corridor Typologies are:

- 80-85 feet (Category "A");
- 85-90 feet (Category "B");
- 90-95 feet (Category "C"); and
- 100-120 feet (Category "D") (few or no segments appear to have a ROW of between 95 and 100').

Lane widths, sidewalk widths, widths of planted areas, and other features can be slightly expanded or narrowed, depending on where the subject street section fits within these right-of-way categories.

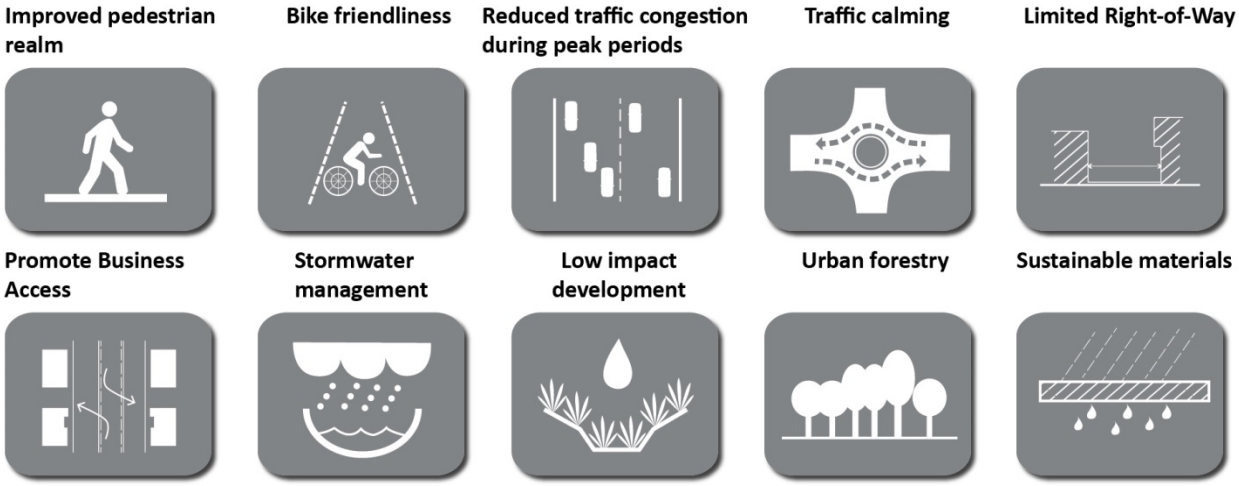
COMMUNITY-PRIORITY BASED DESIGN CONCEPTS

Context-sensitive design approach encourages design that fits the needs of a community. The proposed concepts, therefore, also promote a range of priorities that can be used to determine which streetscape is most applicable to each community context. The Corridor Plan involved outreach and input from the public, property owners, business owners, City staff, and other public agency staff, which informed the concepts presented in this Chapter. The design principles follow the concept of livable main streets, as described in the 2013 Caltrans report on *Main Street, California: A Guide for Improving Community and Transportation Vitality* (summarized in Figure 4-9).

The proposed streetscape design concepts (shown as Figure 4-10 through 4-14) show the existing street section and facilities, alongside a range of proposed options for streetscape improvements that promote various community priorities. For this Chapter, the Planning Team developed 10 different community priorities that can be used to select the appropriate typical cross section for application in specific locations. These priorities include:

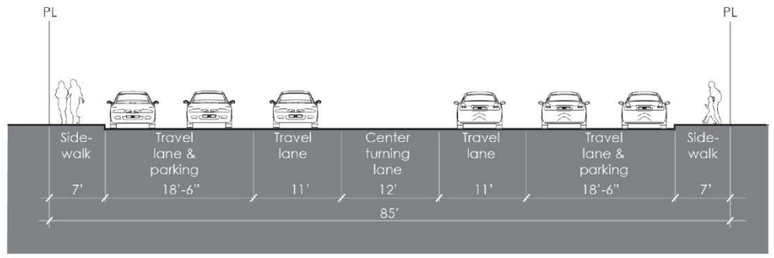
1. **Improved Pedestrian Realm**: pedestrian-friendly design to create an engaging streetscape with wide sidewalks, shaded seating areas, arcades, signage, and adequate lighting.
2. **Bike Friendliness**: on-street bike lanes, segregated bike lanes, shared pedestrian and bike paths, and bike parking.
3. **Reduced Traffic Congestion during Peak Periods**: wider travel lanes and minimum driveway cuts.
4. **Traffic Calming**: parking bulb-outs, on-street parking, enhanced crosswalks, and narrow travel lanes.

5. **Limited Right-of-Way**: tree grates integrated within sidewalks instead of landscaped areas, changing lanes instead of medians, and conversion of travel lane to on-street parking during off-peak travel times.
6. **Promote Business Access:** easy access to businesses on each side of the street, changing lanes, mid-block crossings, and pedestrian refuge areas.
7. **Stormwater Management:** tree grates, curb-cuts, and underground drainage system.
8. **Low Impact Development**: best practice management (BMP) techniques for stormwater management. For example, vegetated swales, regular curb-cuts into infiltration areas, and other features that combine landscaping with stormwater management and water quality features.
9. **Urban Forestry**: Relatively larger street trees and median landscaping.
10. **Sustainable Materials**: permeable pavement, cool pavement, and/or energy conserving street lighting fixtures.

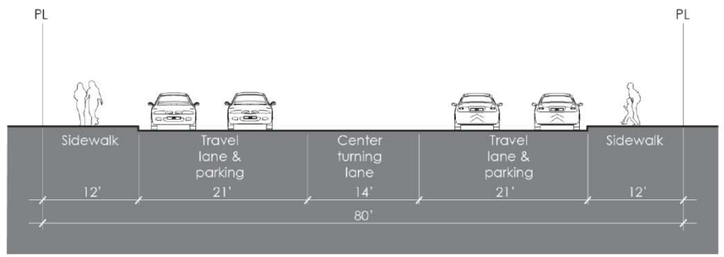


These community priorities will build on the design considerations for Main Streets outlined in Figure 4-9, to encourage contextual design that allows for efficient movement of all types of traffic and users. These design concepts mostly look at the right-of-way cross sections and do not necessarily go into detailed context of connections to the neighborhoods, access to public transit, and intersection designs. The idea is to conceptually show how the various categories of road sections can promote multi-modal travel and fit into the community context. Chapter 7 goes into another layer of detail by providing some guidance to construction costs.

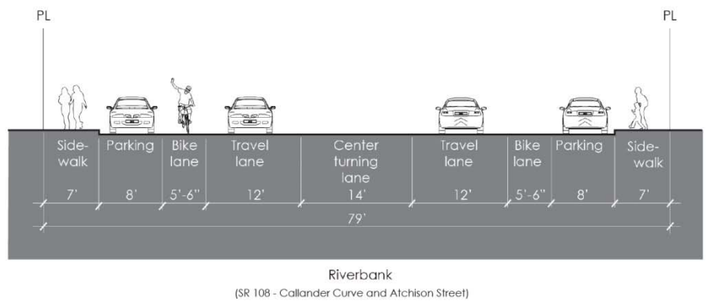
EXISTING CONDITIONS



Modesto
(SR 108 - South of Hintze Road in Lower McHenry)

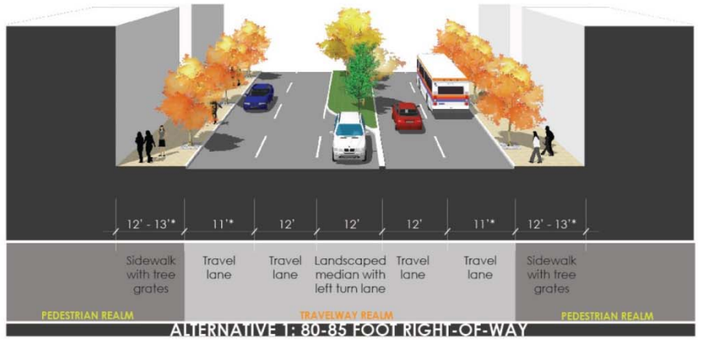


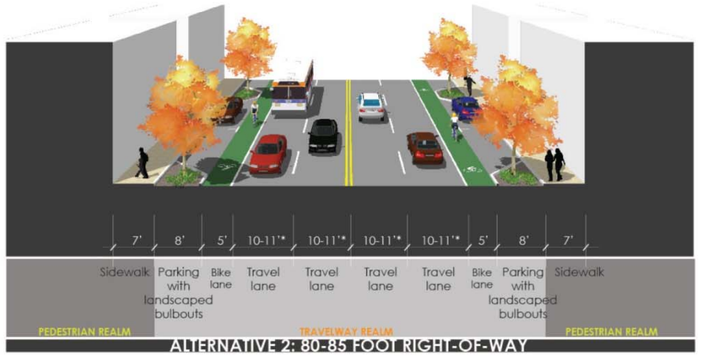
Oakdale
(SR 108 - east and west of Yosemite Avenue:
F Street Historic Transition, Downtown and East F Street)

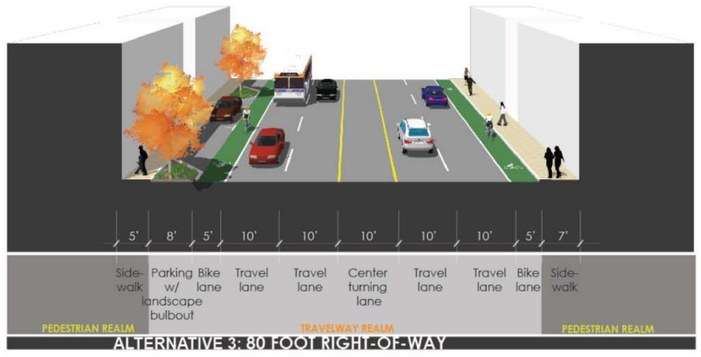


Riverbank
(SR 108 - Callander Curve and Atchison Street)

PROPOSED CONCEPTS





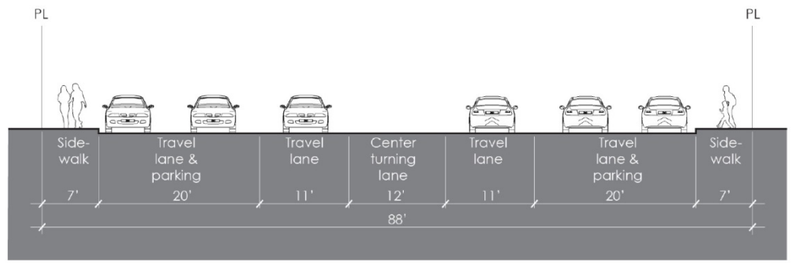


Alternative 3, 80-foot section is proposed for Lower McHenry Avenue, where the City is considering reduction of travel lanes from four to two with additional street parking on both sides to promote new business. A traffic study will be done before implementing an change in lane configuration.

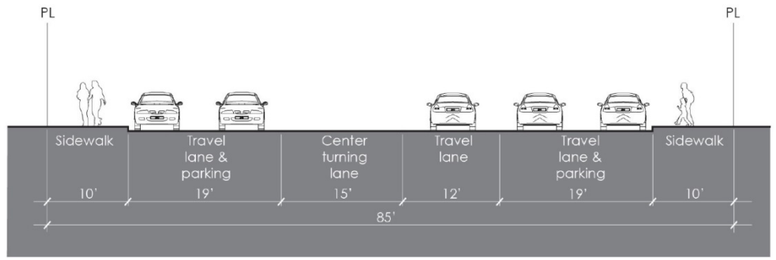
COMMUNITY PRIORITIES

Figure 4-10: Category A (80- to 85-foot Right-of-Way)

EXISTING CONDITIONS

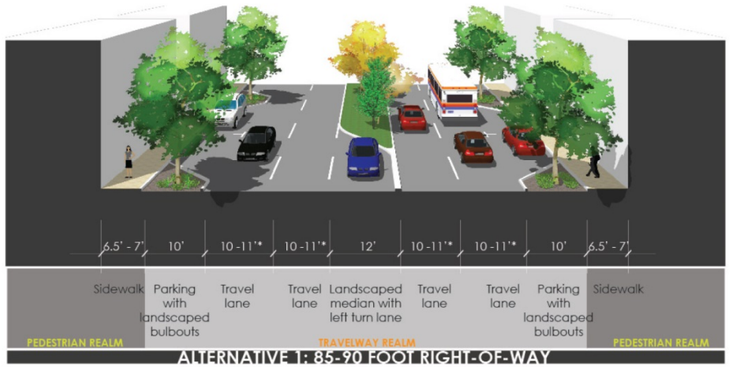


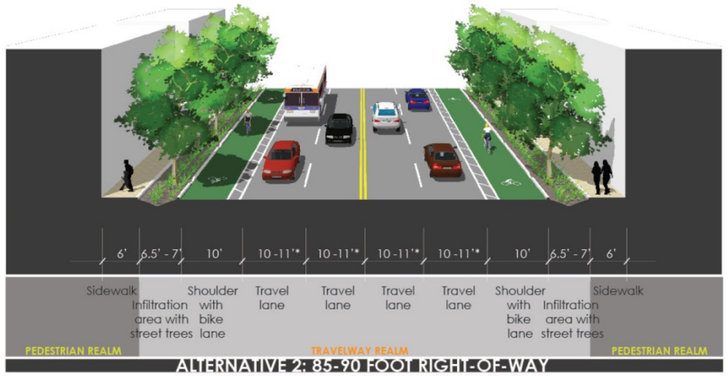
Modesto
(SR 108 - north and south of Orangeburg Avenue - Middle McHenry)

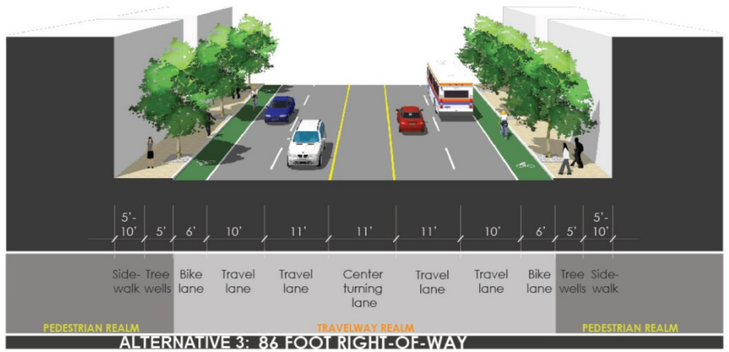


Oakdale
(SR 108 - west of Lee Street)

PROPOSED CONCEPTS



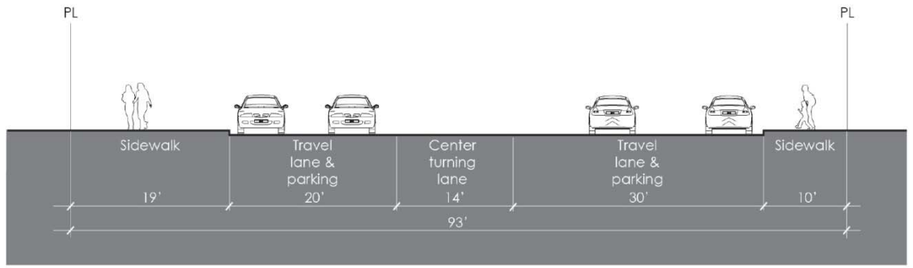




COMMUNITY PRIORITIES

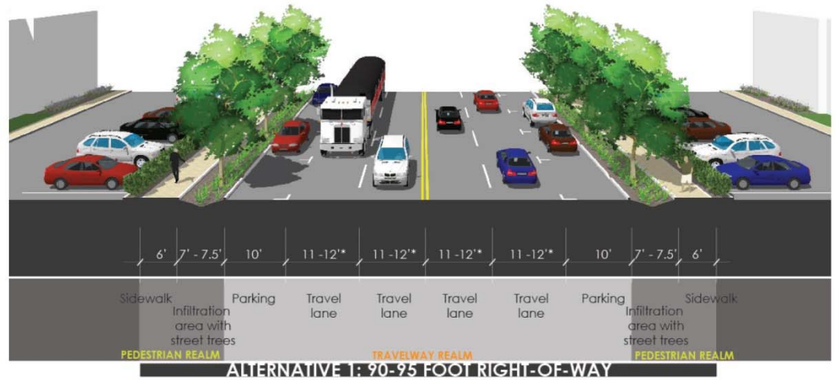
Figure 4-11: Category B (85- to 90-foot Right-of-Way)

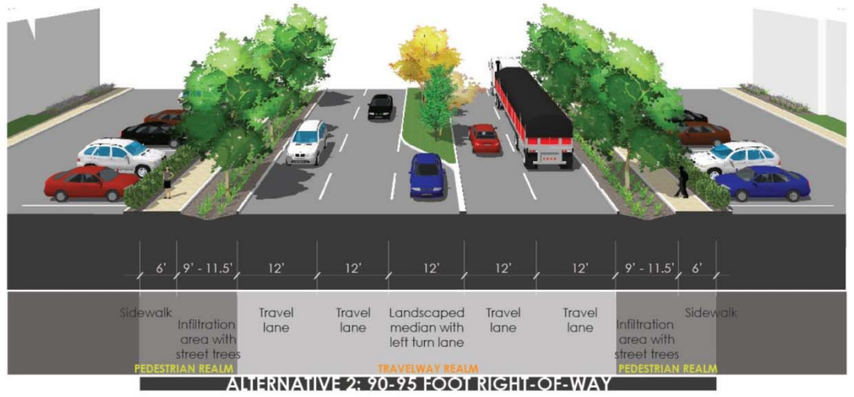
EXISTING CONDITIONS



Oakdale
(SR 108 - Lee Avenue and Oak Avenue on West F Street and around Johnson Avenue in the East F Street)

PROPOSED CONCEPTS

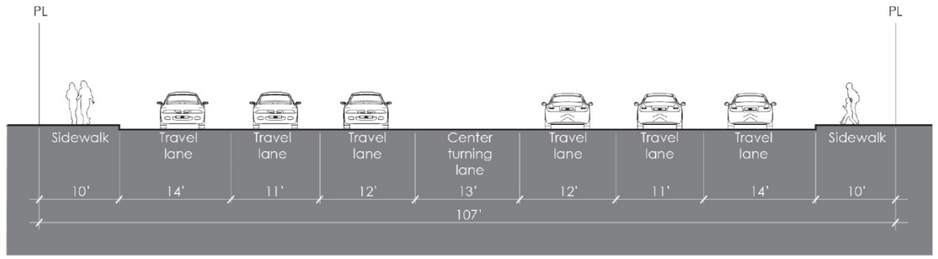




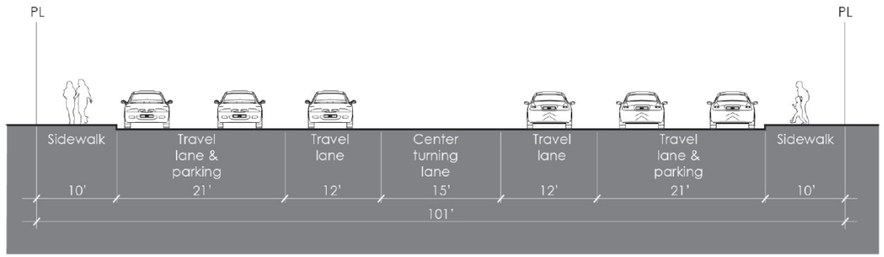
COMMUNITY PRIORITIES

Figure 4-12: Category C (90- to 95-foot Right-of-Way)

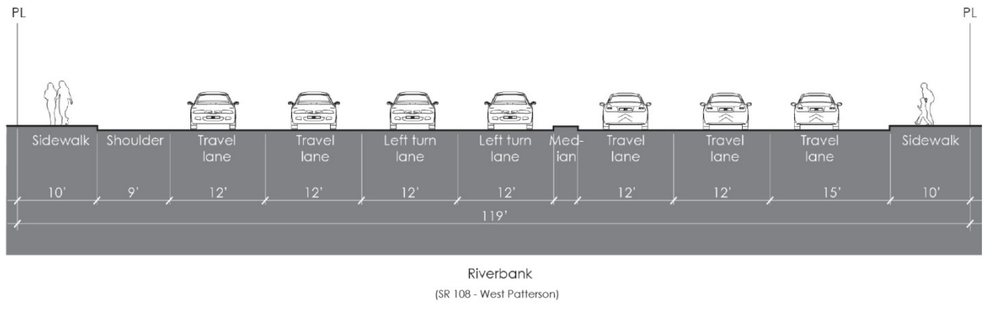
EXISTING CONDITIONS



Modesto
(SR 108 - Upper McHenry)

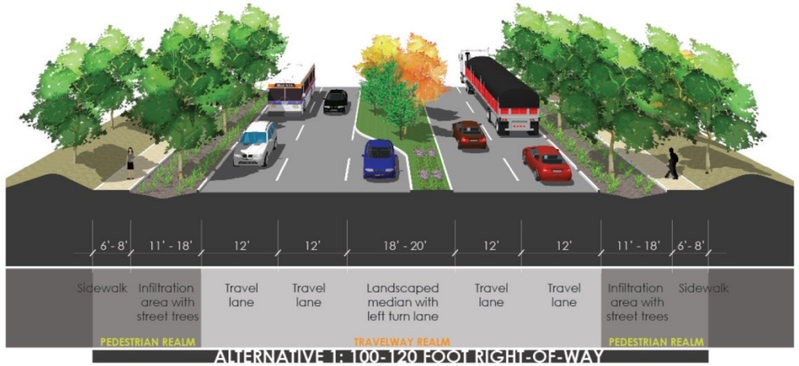


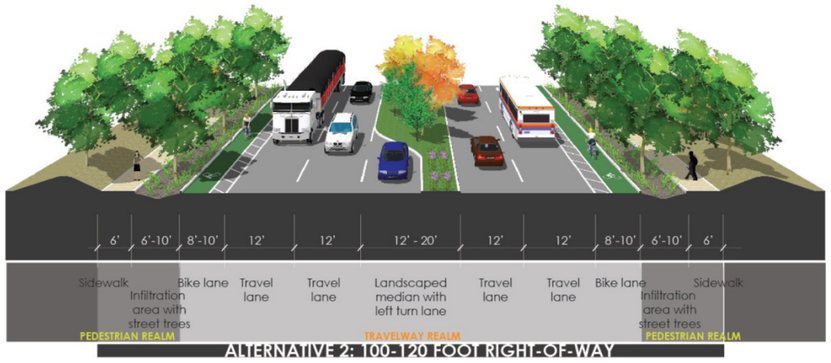
Oakdale
(SR 108 - near eastern and western City limits)

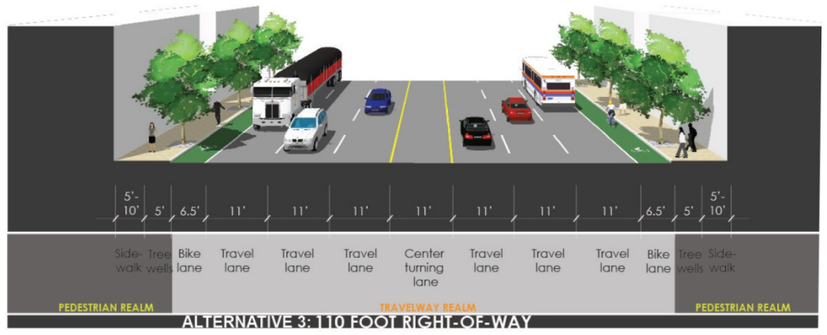


Riverbank
(SR 108 - West Patterson)

PROPOSED CONCEPTS



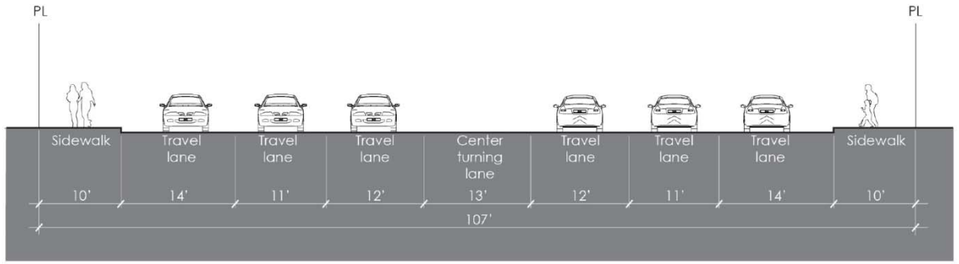




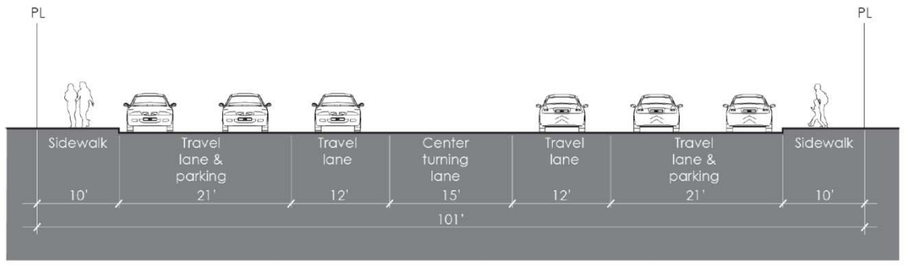
COMMUNITY PRIORITIES

Figure 4-13: Category D (100- to 110-foot Right-of-Way)

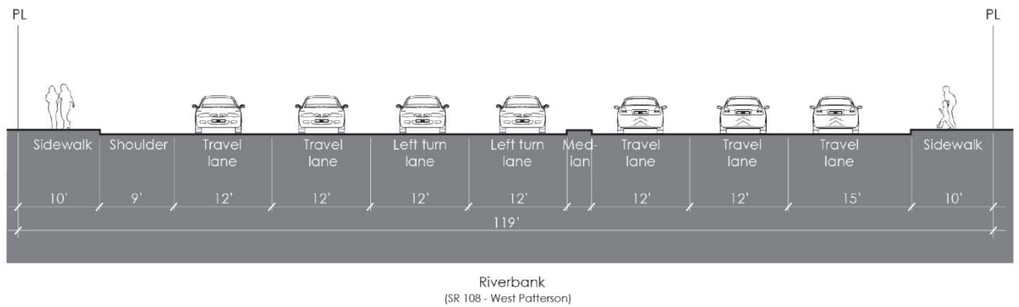
EXISTING CONDITIONS



Modesto
(SR 108 - Upper McHenry)

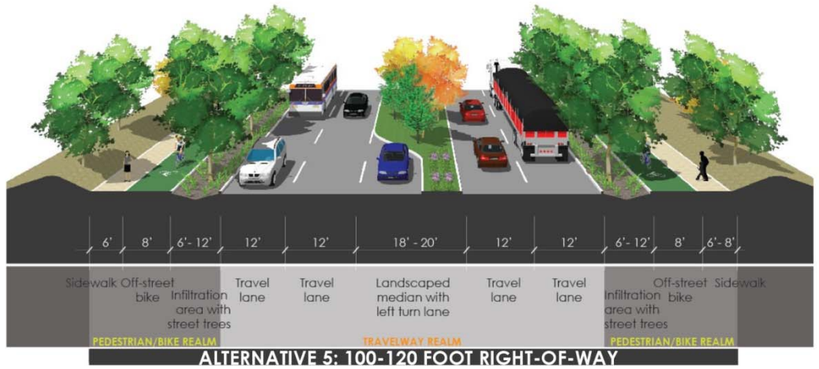


Oakdale
(SR 108 - near eastern and western City limits)

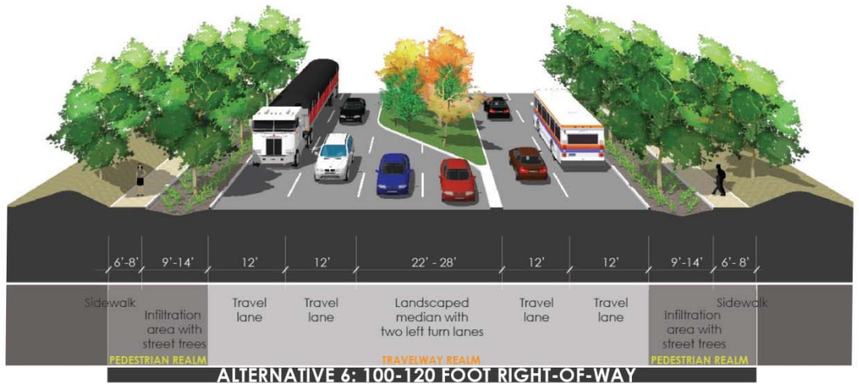


Riverbank
(SR 108 - West Patterson)

PROPOSED CONCEPTS



ALTERNATIVE 5: 100-120 FOOT RIGHT-OF-WAY



ALTERNATIVE 6: 100-120 FOOT RIGHT-OF-WAY

COMMUNITY PRIORITIES

Figure 4-14: Category D (100- to 110-foot Right-of-Way)

VEHICLE SPEEDS

The previous section provides conceptual guidance for improvements along SR 108, including recommendations to enhance aesthetics, safety, multi-modal accessibility, and quality of life for residents and visitors. Vehicle speeds are a primary consideration for improvements to safety and quality of life for residents located in cities along SR 108.

Along the stretch of SR 108 Planning Corridor, vehicle speeds vary from 45-50 mph near the fringes of the community to 25-30 mph through the downtown areas of the cities. Slower motor vehicle speeds allow drivers to stop in a shorter distance and reduce the chance of injuring a pedestrian or bicyclist. A motor vehicle traveling on a level surface at a rate of 40 miles per hour will need nearly 300 feet to stop, whereas stopping distance is only 197 at 30 miles per hour.[3] If a pedestrian is struck by a motor vehicle traveling at 40 mph there is 85% likelihood that the pedestrian will be killed. This percentage drops to 45 percent at 30 mph and 5 percent at 20 mph.[4]

According to the Institute of Transportation Engineers (ITE), whether a community is trying to create a retail-oriented main street or transform a suburban-style arterial into a more walkable mixed-use area, lower operating speeds (of 35 miles per hour or less) are top-priority design outcomes.[5] Vehicle speeds are influenced by:

- Signal timing;
- Narrower travel lanes;
- On-street parking;
- Paving materials with texture;
- Speed limit signage and other advisory signs;
- Street trees; and.
- Buildings constructed closer to the right-of-way to create more of a “main street” aesthetic environment.[6]

The vehicle speed chosen by a driver may be influenced by factors such as:[7]

- Presence and/or history of enforcement;
- Vehicle parking;

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3 Policy on Geometric Design of Highways and Streets, 2001 4th Edition. Chapter 3, Elements of Design. American Association of State Highway and Transportation Officials.

4 U.K. Department of Transportation, 1987. Killing Speed and Saving Lives.

5 Institute of Transportation Engineers. An ITE Proposed Recommended Practice: Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities. 2006.

6 Institute of Transportation Engineers. http://www.ite.org/css/online/DWUT07.html.

7 Florida Department of Transportation. http://www.dot.state.fl.us/trafficoperations/FAQs/SpeedLimitFAQ.shtm.

- Lane width;[8]
- Adjacent land use and development;
- Shoulder width and condition; and
- Pavement type and condition.

Speed limits are not established according to policy priorities, but rather are established by measurements of existing traffic speeds. Over time, as the Plan is implemented, vehicle speeds are anticipated to decrease through the cities of Oakdale, Riverbank, and Modesto, as multi-modal streetscape improvements promote safety of all types of users through traffic-calming techniques.

Changes to speed limits require an engineering and traffic survey, along with consultation with law enforcement officials. Speed reduction can be achieved through design changes and traffic control devices to reduce the speed of the motorist. If changes are made to a section of the highway that are intended to lead to a speed limit reduction, the Caltrans Division of Traffic Operations may recommend that the speed limit be reduced and can place speed limit reduction signage in these areas as an interim solution. Caltrans would complete an engineering and traffic survey within six months and signage must comply with the results of the engineering and traffic survey.

Caltrans has supported community efforts to improve the aesthetics and functionality of State highways, including through efforts similar to this Plan, which is designed to address both local and regional needs for State Route 108. Caltrans has also published documents that assist local governments in collaborative efforts to establish more "Context Sensitive Solutions" for State highways that also serve important local purposes. From the 2013 document, "Main Street, California: A Guide for Improving Community and Transportation Vitality:"

> *Main streets that are both a community street and a State highway typically have motorized traffic speeds of less than 40 miles per hour and serve pedestrians, bicyclists, transit riders and drivers.*
>
> *State highway main streets must accommodate the circulation of the local community as well as regional and statewide travel demands. Planning and designing main streets with principles of multimodal travel, livability and sustainability requires partnering with stakeholders to ensure that mobility and access needs are addressed in a manner that makes main street an asset to the local community.*

The jurisdictions along SR 108 intend to continue this collaborative effort with Caltrans to implement the SR 108 Reinvestment Plan and achieve both local and State objectives for this important travel route.

[8] With every foot that a lane is reduced, the 85th percentile speeds can be expected to be reduced by approximately 3 miles per hour. Fitzpatrick, Kay et al, "Design Factors That Affect Driver Speed on Suburban Arterials," Research Report 1769-3, Texas Transportation Institute, June 2000. Available at: http://www.arlingtonva.us/Departments/CPHD/forums/columbia/pdf/lane_width.pdf.

DESIGN THEMES

Three design themes have been proposed for the cities in view of Michelle Reeve's recommendations to reinvigorate the Corridor by highlighting the community's best assets and working with existing owners. The design themes below identify 3 potential opportunity nodes along SR 108 Corridor that can accommodate the streetscape concepts provided in this Chapter and also have the potential to catalyze reinvestment by changing the street scene, including the directly adjoining buildings and parcels at the intersection.

MODESTO

The City of Modesto maintains an agriculture-economy based small town character, while providing a diversity of metropolitan services and facilities. The design theme therefore, celebrates this notion of a agriculture rich community with community culture involving orchards, tasting days, and Farmer's markets. The choice of flowering plants for important street nodes will help to signify the importance of changing seasons. The street furniture designs mimic the rising sun across agricultural fields theme of the City logo. The choice of paving and street lighting also portray the small town simple design character.

OAKDALE

Leveraging the concept of a "working Western town", as recommended by Michelle Reeves and following her guidance on identify the promising node between SR 108 and Yosemite Avenue (tourist front door to the City), the design theme for Oakdale focuses on maintaining the cowboy capital image of the City. The street furniture and lighting use clean finish and designs in wrought-iron, significant of Western styles. The paving finishes also use grays and earth-red tones to match the Western look.

RIVERBANK

For the City of Riverbank, the design theme follows the city's enthusiasm in celebrating the wine and cheese festival as a great way to draw tourists into the community. The other local asset to highlight is the proximity to the river from the Corridor. Focusing on local entrepreneurs and tenants with active destination businesses, the theme proposes street furniture and lighting to be designed in manner to replicate sceneries associated with the wine and cheese festival or the river. The opportunity node identified here is in close proximity to the location of the annual wine and cheese festival in the City.

street trees


Crape Myrtle


Dawyek Beech


Little Leaf Linden


Fruitless Flowering Plum


Chinese Pistachio


Golden Rain Tree

site furniture


Trash


Bench


Bus Stop


Bike Rack

Change the Street Story:

- Crosswalks
- Parking Stripes
- Bike Lanes
- Bulb-Outs
- Street Trees
- Art
- Light Fixtures
- Street Furniture

surface paving


Pervious

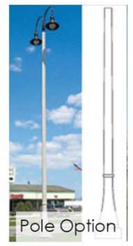

Sidewalk


Enhanced Crossing


Changing Lane

street lighting


Pole Option


Pole Option


Luminaire Option


Luminaire Option

Combine Street Design Themes with Michelle Reeves Suggestions for the Corridor

- Identify emerging, transitional, and mature districts of growth;
- Leverage existing buildings;
- Focus on tenants with destination businesses and local entrepreneurs;
- Identify and improve front doors to the Corridor;
- Treat sidewalk like a stage;
- Get to know the property owners along the Corridor;
- Improve the best nodes; and
- Create identity by exploiting adjacencies

Figure 4-15: Conceptual Design Theme for Modesto

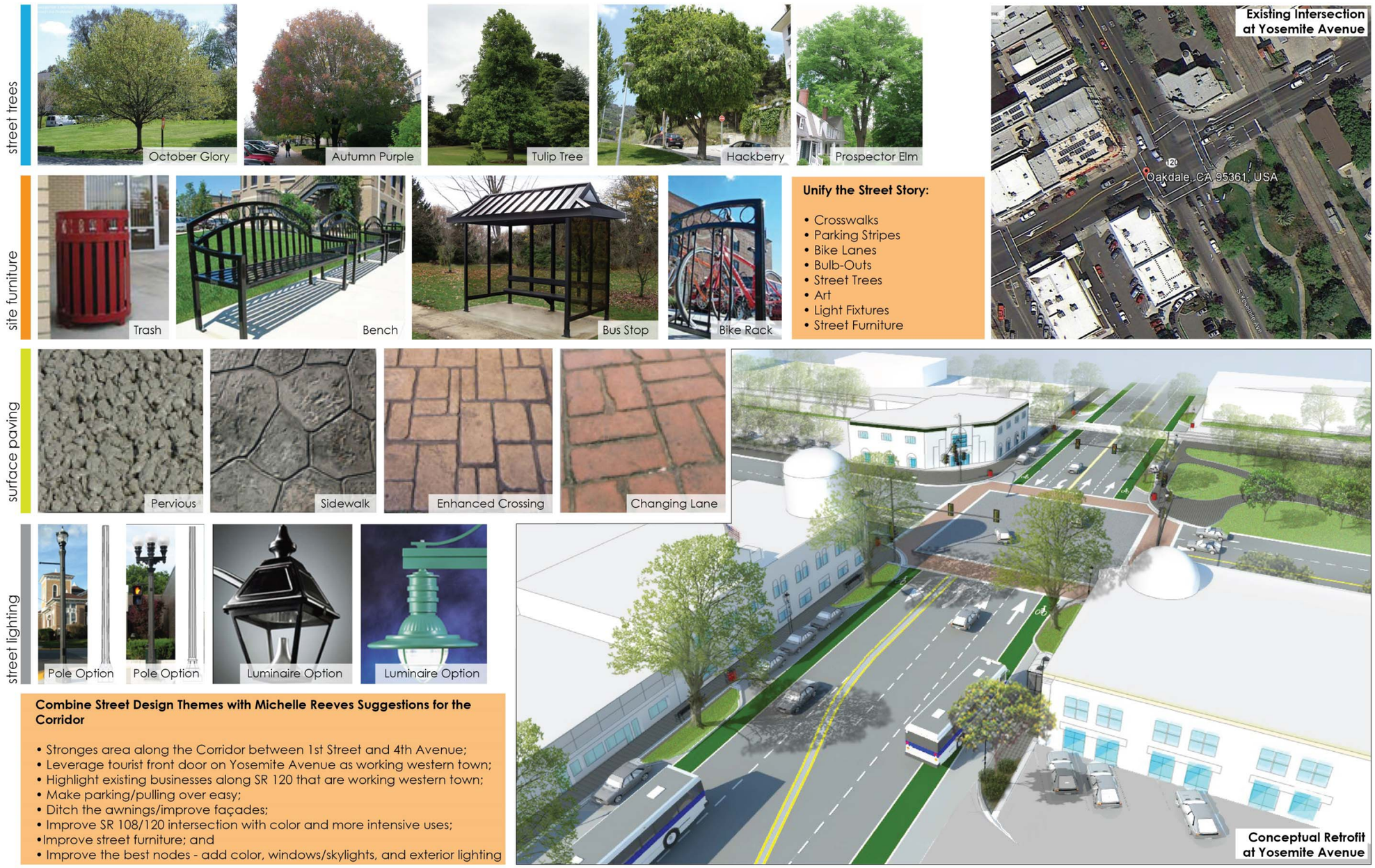


Figure 4-16: Conceptual Design Theme for Oakdale

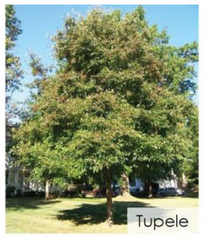
street trees


Fruitless Flowering Plum


Fruitless Pear


Chinese Pistachio


Golden Rain Tree


Tupele

site furniture


Trash


Bench


Bus Stop


Bike Rack (Custom)

Change the Street Story:

- Crosswalks
- Parking Stripes
- Bike Lanes
- Bulb-Outs
- Street Trees
- Art
- Light Fixtures
- Street Furniture

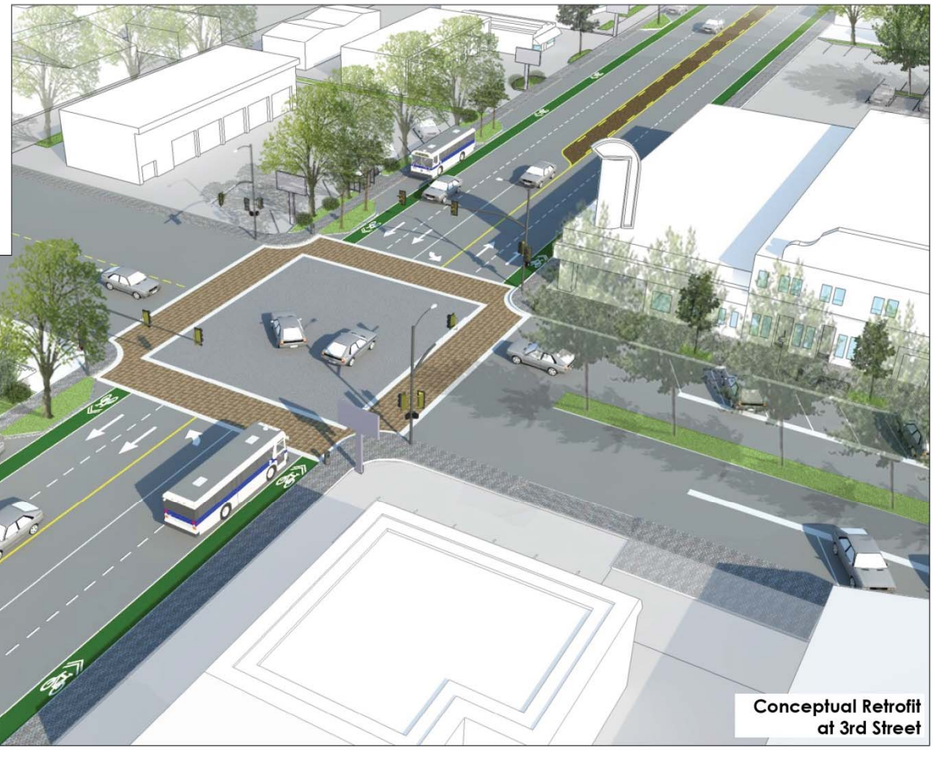
surface paving


Pervious


Sidewalk


Enhanced Crossing


Changing Lane



street lighting


Pole Option

Pole Option


Luminaire Option


Luminaire Option

Combine Street Design Themes with Michelle Reeves Suggestions for the Corridor

- Identify emerging, transitional, and mature districts of growth;
- Leverage existing buildings;
- Focus on tenants with destination businesses and local entrepreneurs
- Identify and improve front doors to the Corridor - by designing edible parks, adding agricultural mural, and improving key entry buildings;
- Improve street story by enhancing as a Country road, adding orchards, and encouraging cross traffic; and
- Improve the best nodes

Figure 4-17: Conceptual Design Theme for Riverbank

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