

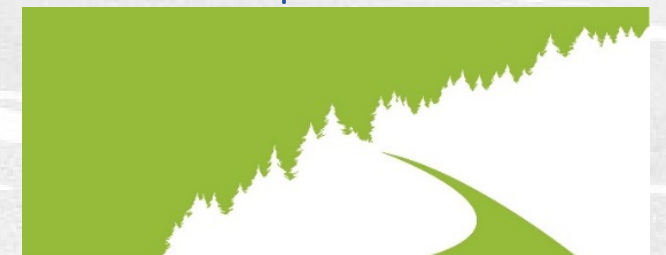
SR 49 JAMESTOWN TO COLUMBIA

Multi-Modal Corridor Plan

Adopted December 09, 2020



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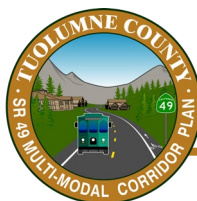


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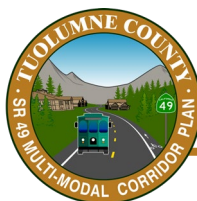
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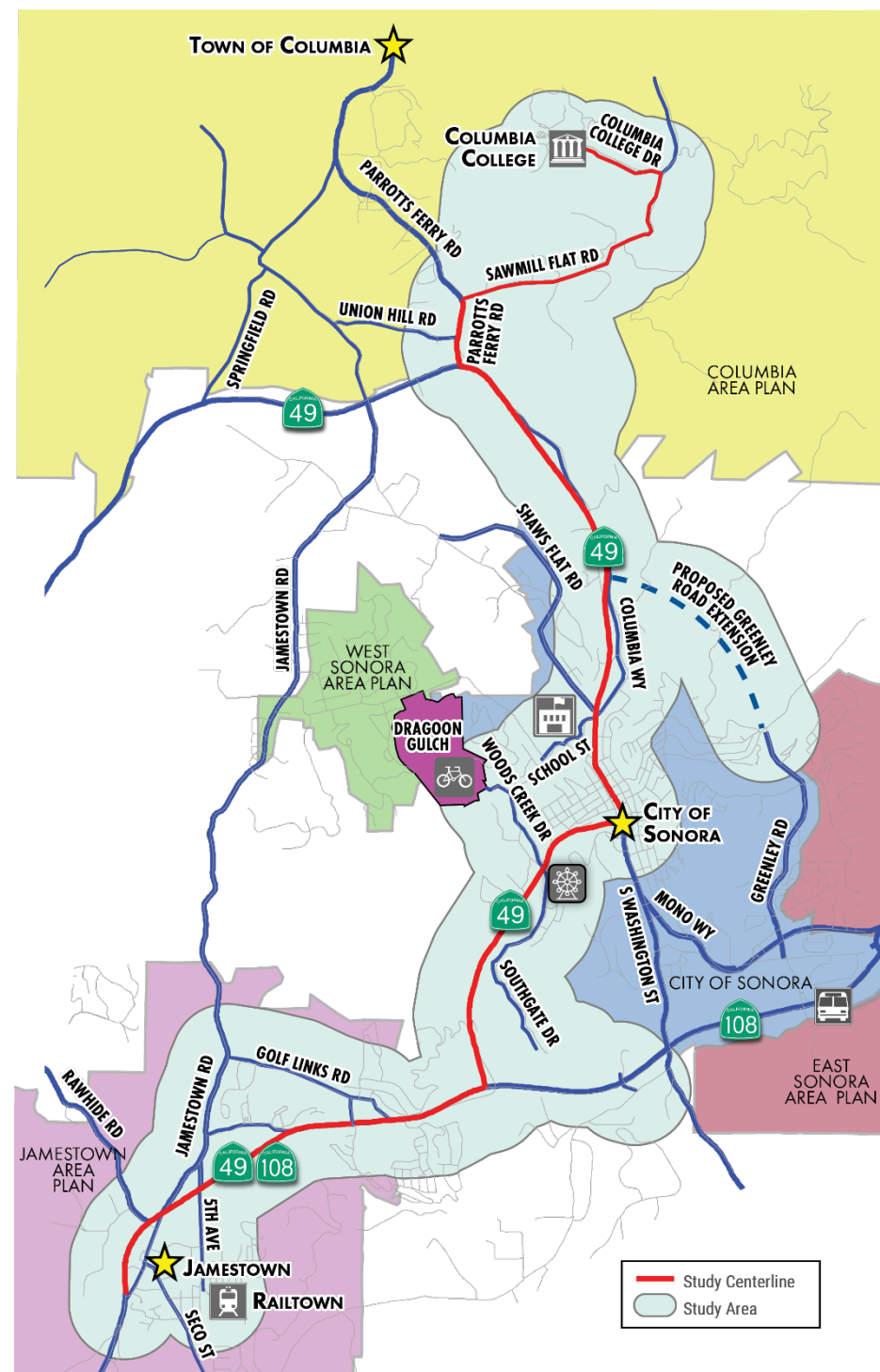


EXECUTIVE SUMMARY

A Trip through Mother Lode Country: SR 49 is historically rich, thirsty for modern improvements

The study area corridor, approximately 6 miles of State Route (SR) 49, from Jamestown, through the City of Sonora to Columbia College is known for its communities' abundance of character. The route was a main artery of the late 19th and early 20th century gold mining boom, the "Mother Lode," leaving these close-knit communities with historic charm that make them a popular tourist destination, as well as a stop-through for those on their way to the nearby Yosemite National Park and other popular Northern California destinations. In addition, the Corridor's natural landscape makes it a gem for outdoor recreation and adventure seekers. Annually, the area sees a large influx of tourism from April to October.

This blend of sought-after attractions, combined with general use of the Corridor by local residents and commuters, make for a level of congestion that is presenting major challenges to the area. As thoroughfares collide



with crowded landing places for out-of-area pedestrians and vehicles, accessible parking is in short supply, through routes for bicycles and pedestrians are non-existent in most areas, safety improvements are necessary and better accommodations for area employees and the local aging community are becoming essential. Communities within the corridor lack a general connectedness, making use and travel between them problematic. Additionally, topographic constraints present an additional

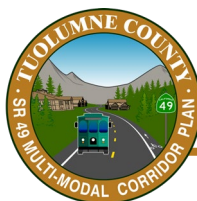
challenge, with steep terrain impeding the ease of road and path expansion options.

The SR 49 Multi-Modal Corridor Plan (Plan) aims to connect the distinctive communities within the corridor, increase mobility and transportation choices for all area users, and to reduce congestion while improving air quality for Tuolumne County. Throughout reach, study and stakeholder input, the Plan comprises a phased approach that proposes short-, mid- and long-term projects to help meet the overall goals for improvement. The backbone of these multi-modal improvements includes connecting Jamestown, Sonora, and Columbia College with a Class 1 shared use path accommodating both bicyclists and pedestrians. The Plan acknowledges the critical links that must be formed with the Tuolumne County General Plan (specifically the Distinctive Communities Growth Scenario) and State Bill 1 Congested Corridors to create a cohesive solution that ultimately allows all plans and legislation to work in unity to address the local predicaments and achieve an overall Vehicle Miles Traveled (VMT) reduction.

Solutions offered are specific to introducing shared use paths, new Class II and III bike facilities, new proposed sidewalk locations, increasing transit ridership, establishing Park-n-Ride facilities, creating alternate access for motorized transportation around congested areas, complete streets and technology enhancements.

As part of the Solutions for Congested Corridors Program (SB1) two parallel corridor plans were developed for SR 49 including the Caltrans Corridor Plan focusing more on the highway improvements, and the TCTC SR 49 Multimodal Corridor Plan focused on incorporating multimodal facilities in the corridor while also looking at off highway connectivity. The Caltrans Corridor Plan can be found at [\(TBD-add hyperlink\)](#).

-  **Connect distinctive communities**
-  **Increase mobility**
-  **Decrease congestion**
-  **Improve air quality**

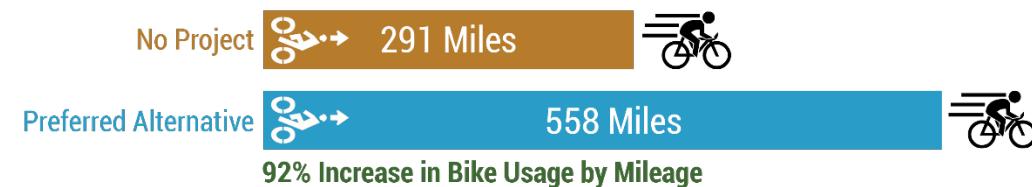


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Overall improvements sought through the proposed modification solutions include enhanced multi-modal connectivity, safety and choice, reduced VMT and Green House Gas (GHG) emissions, SB1 performance metrics, reduction in vehicle and multi-modal crashes, and an addition of miles of multi-modal infrastructure within a half-mile of defined community boundaries. Analyses estimates based on the proposed solutions show an expected increase in bicycle and pedestrian travel with reduced travel times, increased transit ridership and a reduction in Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT), when compared to No Project projections for the area. Furthermore, the solutions support the Distinctive Communities Growth Scenario (Tuolumne Co 2016 Final RTP "Rural Sustainable Strategies") with respect to air quality improvement and GHG emission reduction.

Corridor Bike Travel (Miles)



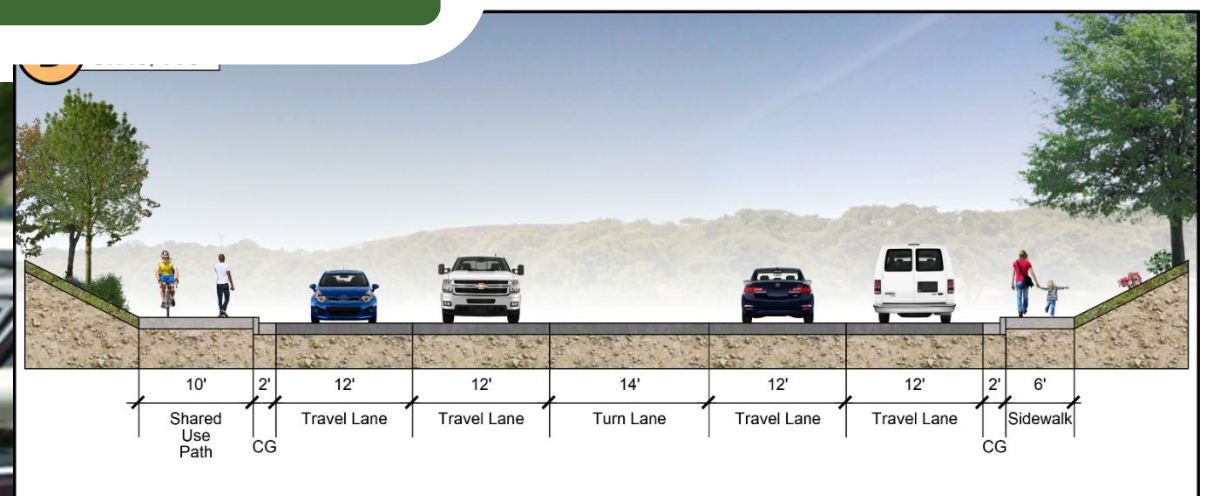
Corridor Walk Travel (Miles)

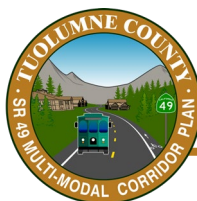


Implementation is proposed to be addressed in three categories, identifying select projects within the Plan to be prioritized as short-term, mid-term or long-term. Successful implementation will rely heavily on collaboration with regional partnering agencies to identify ongoing project prioritizations, as well as cooperation between the proposed solutions and other active parallel efforts (Vision Sonora Plan, Rails with Trails, and building sections of Woods Creek Trail along with new developments).



-  Implement Shared Use Path
-  Leverage Major Highway Projects to include multi-modal improvements
-  Support Transit; decrease headways, expand the Adventure Trolley, and construct park and ride lots
-  Secure right of way for key projects
-  Leverage local and state funding, apply for and support grant funding





INTRODUCTION

The Study Area - The SR 49 Corridor, Jamestown to Columbia

The study area corridor includes approximately 6 miles of State Route (SR) 49, from Jamestown, through the City of Sonora to Columbia College as shown in **Figure 1A**.

The area is well-known for its historic and cultural resources related to a gold mining boom in the late 19th and early 20th centuries known as the “Mother Lode”. SR 49 is the main transportation artery of the Mother Lode Country (**Figure 1B**). Sonora is also the front doorstep to the infamous Yosemite National Park where visitors travel from all over California, the United States, and internationally to visit and explore the area. This proximity to popular recreation and historic destinations and to the major urban centers San Francisco and Sacramento in Northern California (**Figure 1C**) make weekend and vacation visitation very heavy, particularly between April and October. SR 49 doubles as the historic main street through the City of Sonora, creating transportation challenges for residents, visitors and the surrounding business district.

Historic resources are fundamental to the character and sense of place in this corridor. Tied to the gold mining era, the study area has no shortage of history reflected in the landscape of the corridor. Jamestown, the City of Sonora, and Columbia all have downtowns lined with many historic buildings, reflective of the region’s history. These historic main streets attract tourists wanting to experience this sense of place.

Beyond the numerous historical attractions, the area offers off-road trails attracting mountain biking and other outdoor recreational activities, as well as large events hosted at the centrally located fairgrounds. The nature of visitation to the area makes tourism a key component to the economy and the economic success of the region.

Although the corridor serves a large tourist population, two other important user groups travel the corridor regularly, residents and commuters. Jamestown and Sonora are smaller communities that still have local amenities to serve their residents, including schools, hospitals and commercial centers. Given the smaller, aging population and the County government services housed in Sonora, many employees that work in the area come from nearby communities and help support the local businesses, particularly during the mid-week.

An essential function of the SR 49 Multi-Modal Corridor Plan (Plan) from Jamestown through Sonora is to identify opportunities to add multi-modal transportation choice that helps reduce congestion within the communities caused by the complexity of the different user groups while maintaining the historic character of the community.

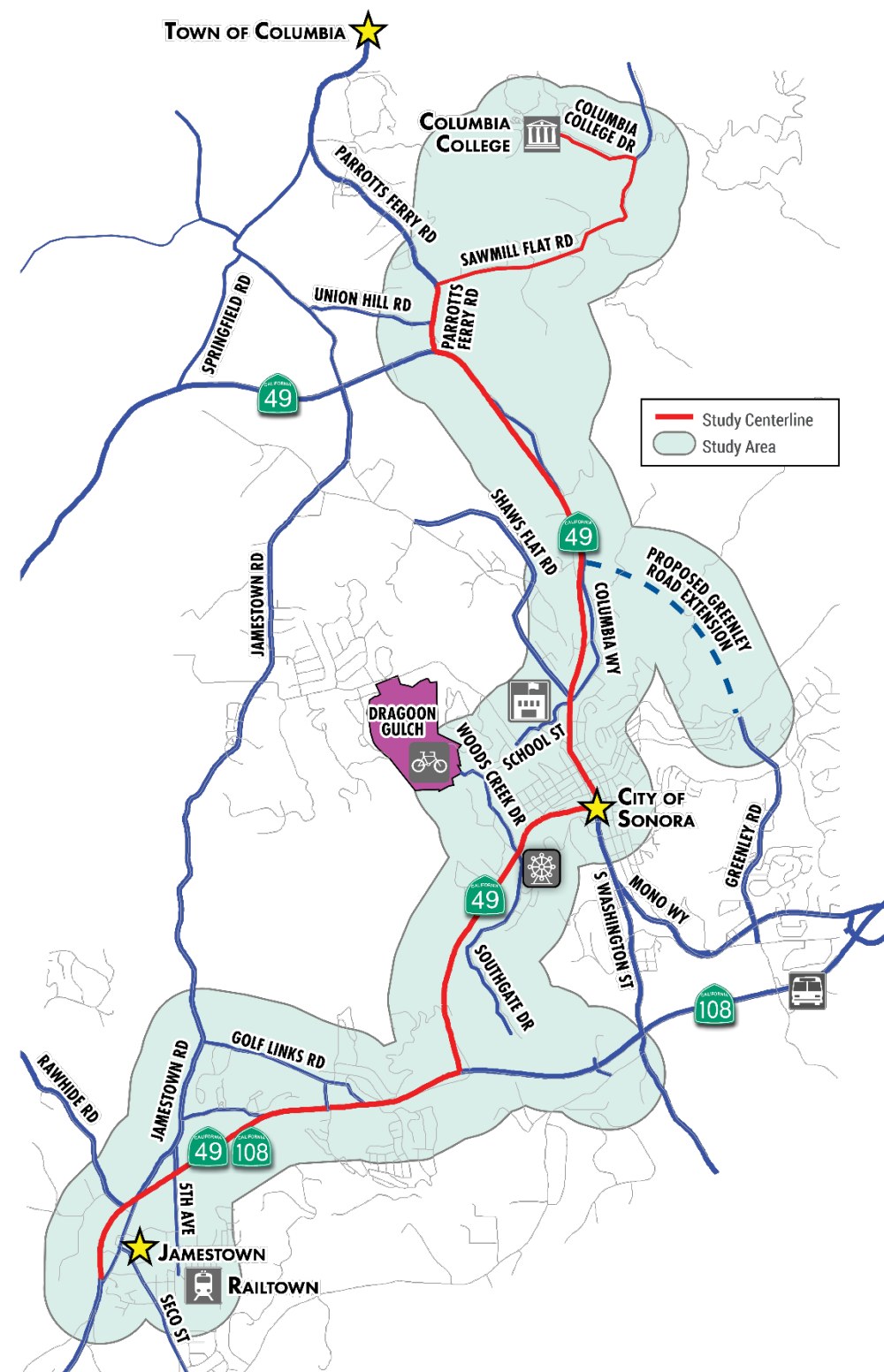


Figure 1A: Project Study Area

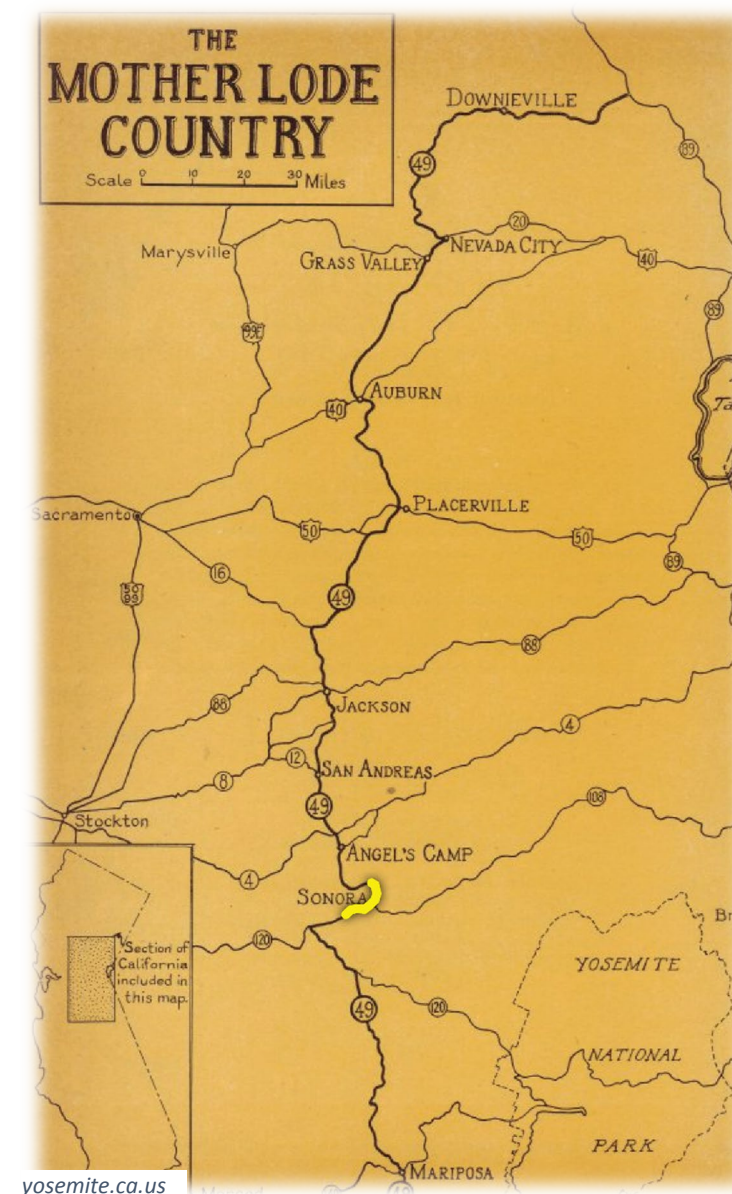


Figure 1B: Mother Lode Map



Figure 1C: Regional Location Map



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Goals/Objectives

The primary goal of the SR 49 Multi-Modal Corridor Plan is to increase mobility and transportation choice for all users and reduce congestion while improving air quality for Tuolumne County. Several objectives have been identified to achieve this goal. These objectives include the following:

- Reduce traffic congestion, reduce greenhouse gas emissions (GHGs), and reduce vehicle miles traveled (VMT) within the study area.
- Improve pedestrian, bicycle, automobile, and transit safety.
- Implement complete streets along SR 49.
- Eliminate large gaps in the pedestrian and bicycle infrastructure.
- Accommodate transit stops and transit access along SR 49.
- Increase access, transportation choice, and health opportunities for disadvantaged communities
- Provide opportunities for stakeholders and the community to shape future transportation opportunities in the corridor.
- Identify critical short-term improvements for consideration in the State Highway Operation and Protection Program (SHOPP).
- Comply with Senate Bill 1 (SB1) - Solutions for Congested Corridors Program requirements

SB1 and the Congested Corridors Program was established in 2017 to create innovative approaches to providing congestion relief among California's freeways and major thoroughfares, among the most congested in the nation. Program goals include providing more transportation choices for residents, commuters, and visitors, improving traffic flow while improving air quality and taking on the environmental and health challenges, and developing partnerships between Caltrans and local and/or regional agencies to work together to find wide-reaching solutions.

The SR 49 Corridor fits the mold for SB1 and the Congested Corridors Program. The corridor mixes tourists, trucks, commuters, and residents along the only major thoroughfare (and lifeline) for the small communities of Jamestown, Sonora, and Columbia. The result is serious congestion that impacts quality of life for all users, as well as impacts the economic development potential for the historic downtowns.

Outside of limited shelters/facilities and a few disjointed class III bike segments, multi-modal facilities do not exist in the corridor. There are no bike and pedestrian facilities connecting the communities, and the majority of the limited sidewalk is in poor condition with major gaps creating challenges for seniors and those with disabilities. Transit services offer limited stops and are only available hourly if not longer headways. The Plan

is intended to address many of the multi-modal deficiencies, and develop solutions in collaboration with stakeholders and the communities to improve transportation options, safety, and overall connectivity for visitors, commuters, and residents.

The Plan expands upon and supports the goals and objectives of numerous local and state efforts and programs. This integration is illustrated in **Figure 2** where those objectives closer to the center of the graphic are most directly in-line with the goals and objectives of the Plan and those further from the center are relevant yet less directly. Overall, the Plan is a consistent, coordinated step forward in achieving local and regional transportation goals and objectives.

"Complete Streets are streets for everyone. They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work."
Smartgrowthamerica.org

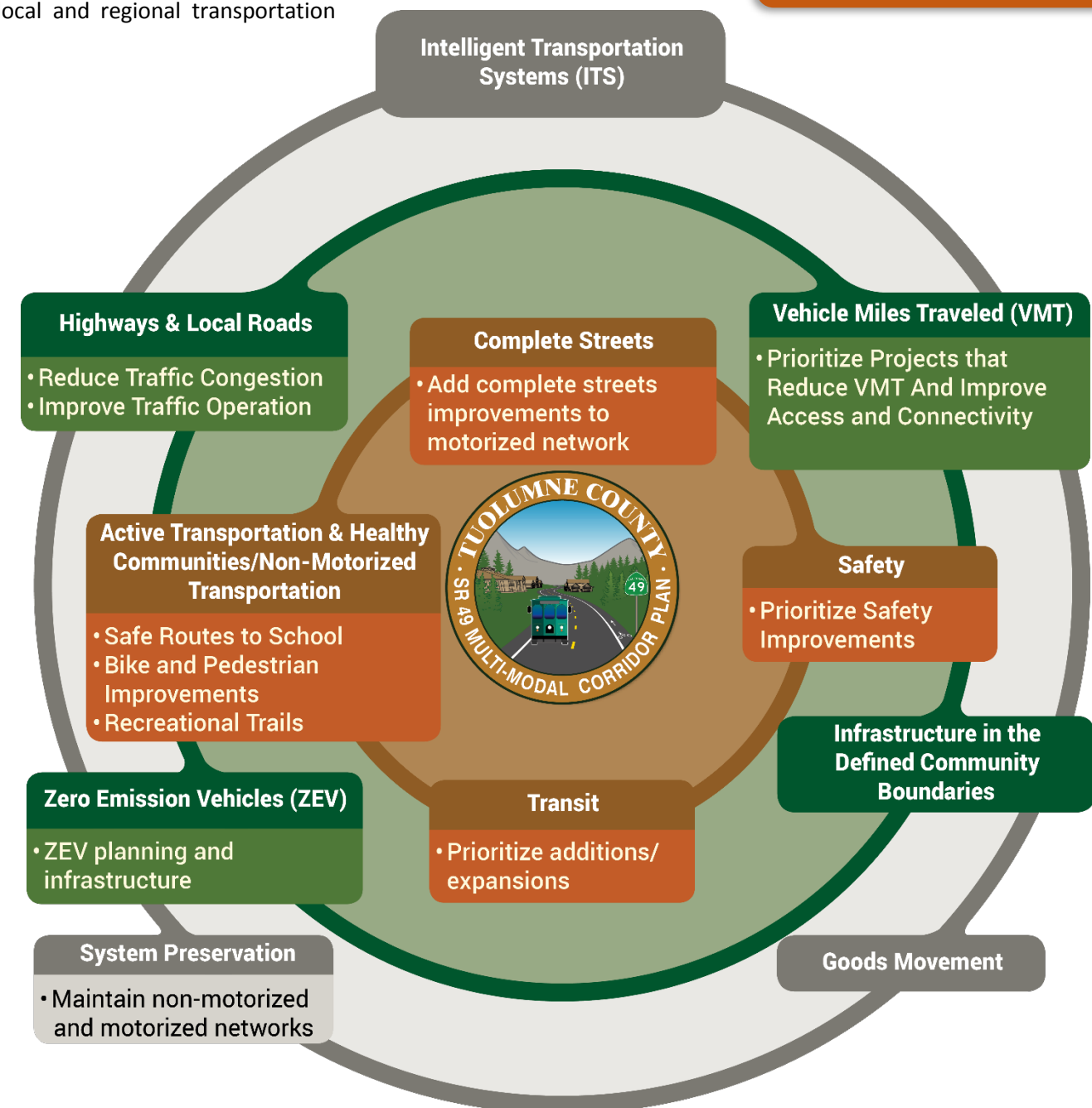
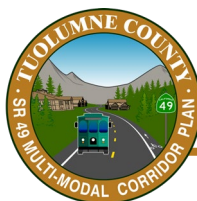


Figure 2: Goals & Objectives Integration



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Existing Conditions

The corridor is built into the western foothills of the Sierra Nevada Mountains, connecting historic streets designed on a grid pattern heavily affected by the terrain. The old bustling mining towns of Jamestown and Sonora have much of that history preserved along the downtown main street areas including the business district lining the main highway, SR 49.

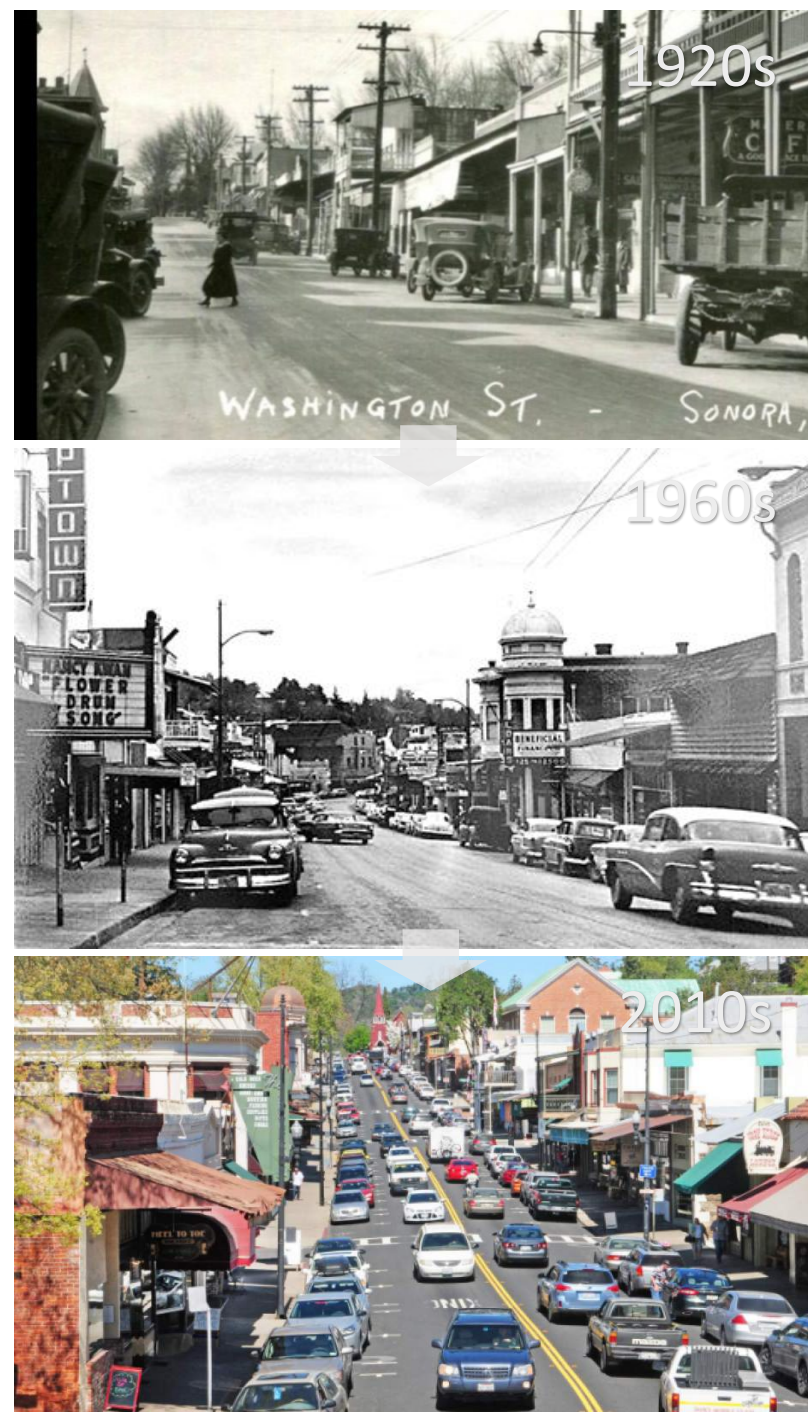
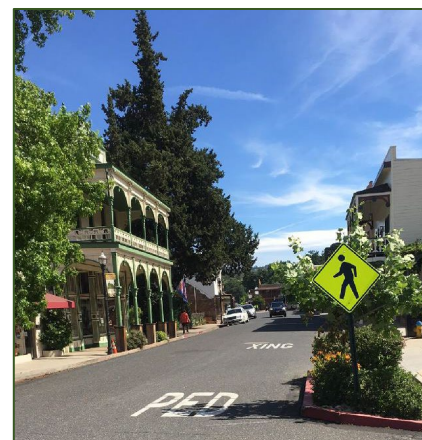


Figure 3: History of SR 49 Main Street in Sonora

The challenges of the SR 49 Corridor date back to original development patterns and how the highway was initially constructed. As seen in **Figure 3** (photos provided by www.sonoraca.com), SR 49 through downtown Sonora has experienced traffic pattern changes through the years within the same right of way. Terrain and the limited right of way are serious challenges for more modern multi-modal improvements, which typically require additional right of way.



Unlike historic downtown Sonora, SR 49 does not go through the historic Jamestown main street and offers more gentle slopes, providing a benefit for adding multi-modal opportunities. From Jamestown to Sonora, SR 49 becomes less limited by adjacent development and provides opportunity to modernize the right of way with non-motorized options.

Existing Land Use and Employment Trends

New development in the corridor remains challenged given market and topographic conditions, and previously approved residential projects have advanced slowly. The main focus for future development in the corridor is affordable housing, infill development, and redevelopment of the downtown areas. Residential and mixed-use development areas primarily surround the town centers, but there are several residential areas spread out along the corridor as well. The main employment center is located in the City of Sonora, and includes City of Sonora administrative offices, Tuolumne County administrative offices, the regional detention facility and associated services, a hospital, and a large downtown business district catering to tourists.

Jamestown is the second largest employment center within the corridor consisting primarily of the historic downtown and associated business district and the Railtown State Park. Columbia College at the north end of the corridor is also a significant destination and employer for the region. Nearby Blue Mountain Minerals and logging activities continue to be major employers in the area. Truck traffic generated by these operations have a significant impact on the SR 49 Corridor.

Existing land uses within the corridor are illustrated in **Figure 4**. In addition to the commercial and residential clusters described above, the land use map also reveals the extensive amount of vacant land in

the study area. This vacant land provides both the opportunity for infrastructure given the lack of built constraints but also a challenge given most of this land is mountainous with extensive topographic constraints.

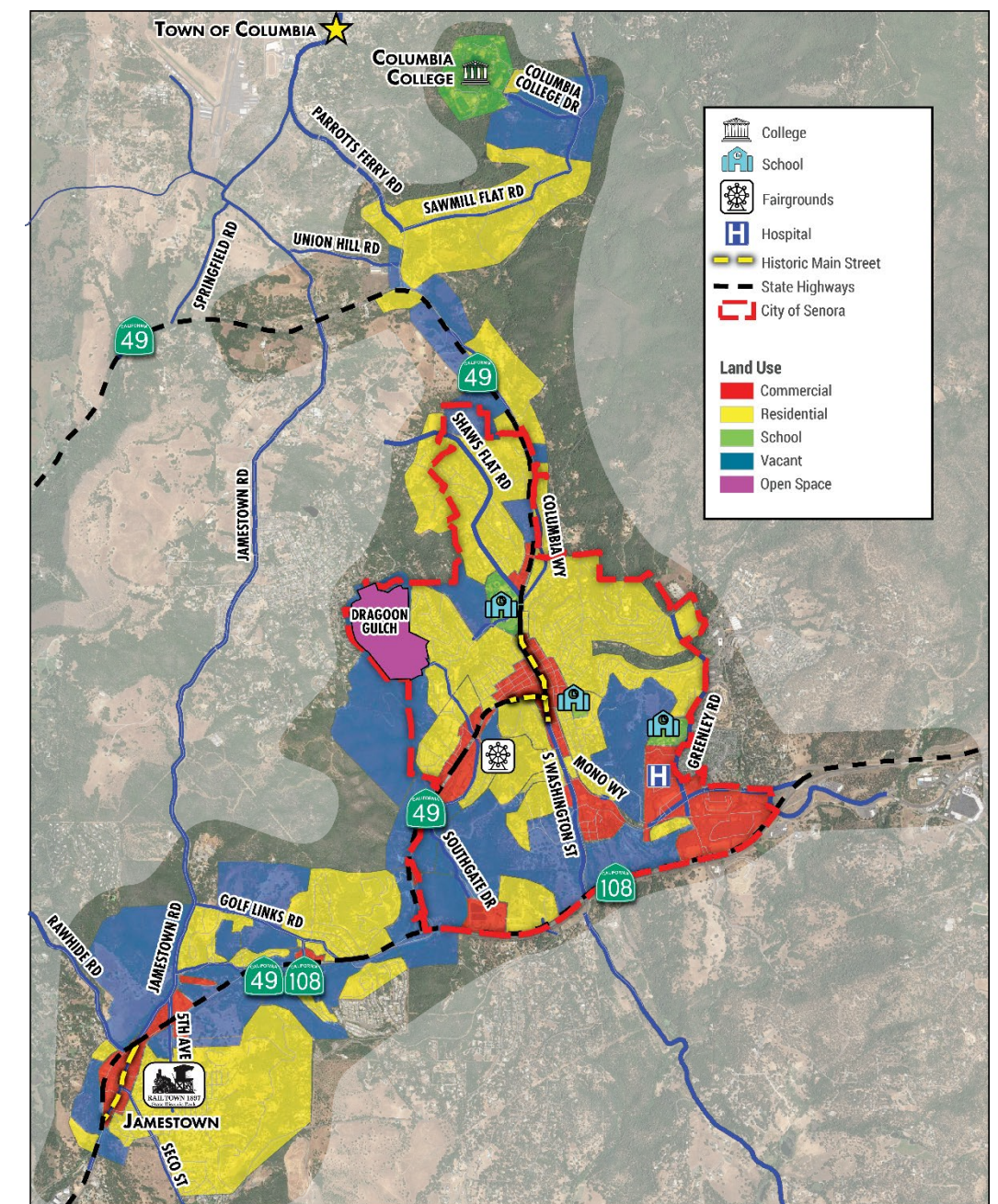
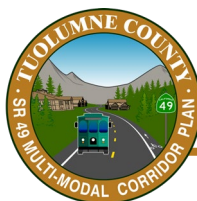


Figure 4: Land Use Map



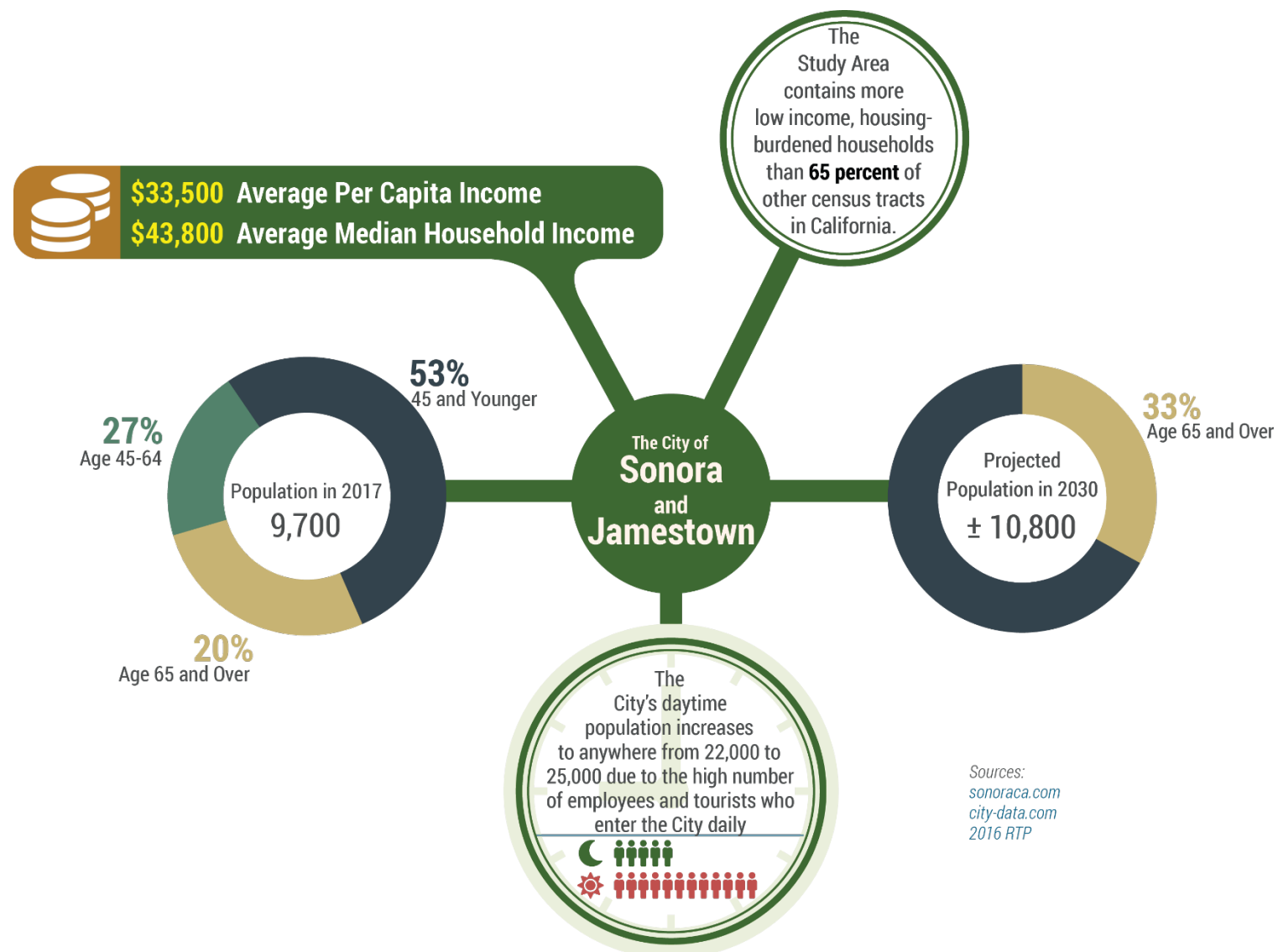
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Population & Demographics

Overall, the study corridor serves a surrounding population of just under 10,000 residents, or approximately 18% of the Tuolumne County's population. The City of Sonora is the primary population center within the corridor and has a population of approximately 4,900 residents. Jamestown adds another approximately 3,500 residents and the outlying areas add another approximately 1,300 residents. As one of the larger employment bases for the surrounding region, the City of Sonora experiences an influx of commuters from surrounding communities. The heritage of the corridor also attracts hundreds of thousands of visitors throughout the year. Daily commuters coming into the corridor for employment including government (City, County, and State), schools, and small businesses as well as the addition of visitors far exceeds the resident population. While the commuters and visitors create economic opportunities, they also create a number of transportation challenges.

The corridor has an aging population with 20-percent of residents over the age of 65, which is expected to increase to over 30-percent in the next ten years. In addition to the aging population, Sonora and Jamestown also have a very low Median Household Income (MHI) at \$43,800, which is significantly lower than the threshold for disadvantaged communities. The aging, low-income residents often rely on multi-modal opportunities to access jobs, make doctor appointments, and improve overall accessibility and quality of life.



Existing Transportation Facilities

SR-49 is a two-lane facility connecting Jamestown to the City of Sonora and north to Parrotts Ferry Road and Columbia College. The Town of Columbia is only one mile to the north from the intersection of SR 49 and Parrotts Ferry Road. Maps and existing cross sections of the corridor are provided on the following pages **Figures 6A-C**. As seen in the cross sections, multi-modal facilities are non-existent along much of SR 49 and are limited to sidewalks mainly present within the communities. The cross sections and maps denote areas where both opportunities and challenges exist for future improvements.

The City of Sonora is centrally located within the Corridor. SR 49 through downtown Sonora has the second highest average daily traffic (ADT) in the corridor at 18,500 (**Figure 5**); it also had the largest number of pedestrian crossings at nearly 25,000 pedestrians counted on a weekend in late April 2018 (**Figure 8** – page 9). The pedestrian count is reflective of a weekday and busy weekend at the start of the tourist season that typically runs through October. As SR 49 doubles as Sonora's Main Street, it is unsurprising that mixing a highway with a visitor attraction (the historic downtown area) creates the most congested segment within the corridor. The north and south segments do not have the same level of activity and congestion as within Sonora, but existing residential areas and various commercial and mixed-use developments present other challenges to the corridor.

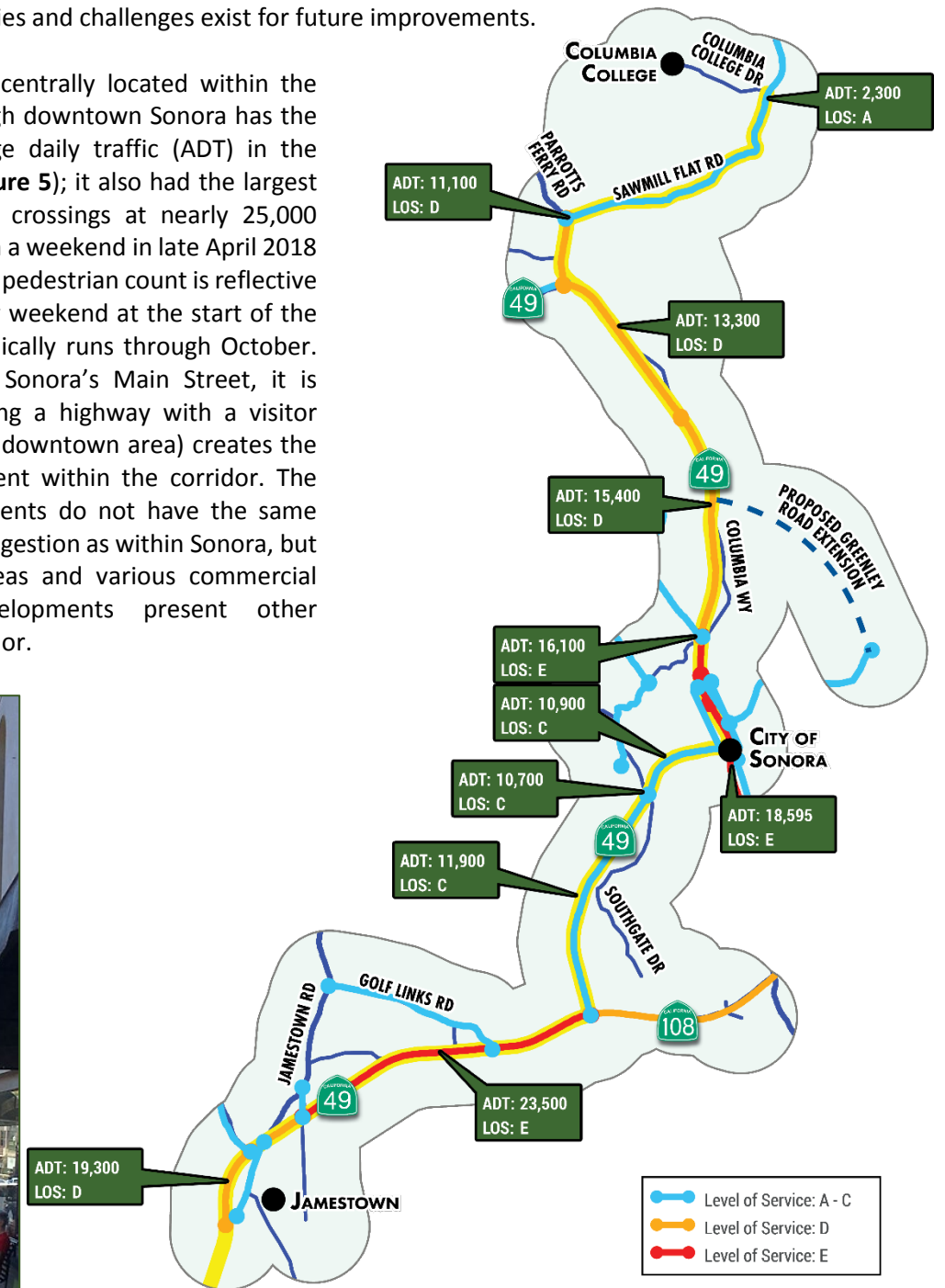


Figure 5: Average Daily Traffic Map



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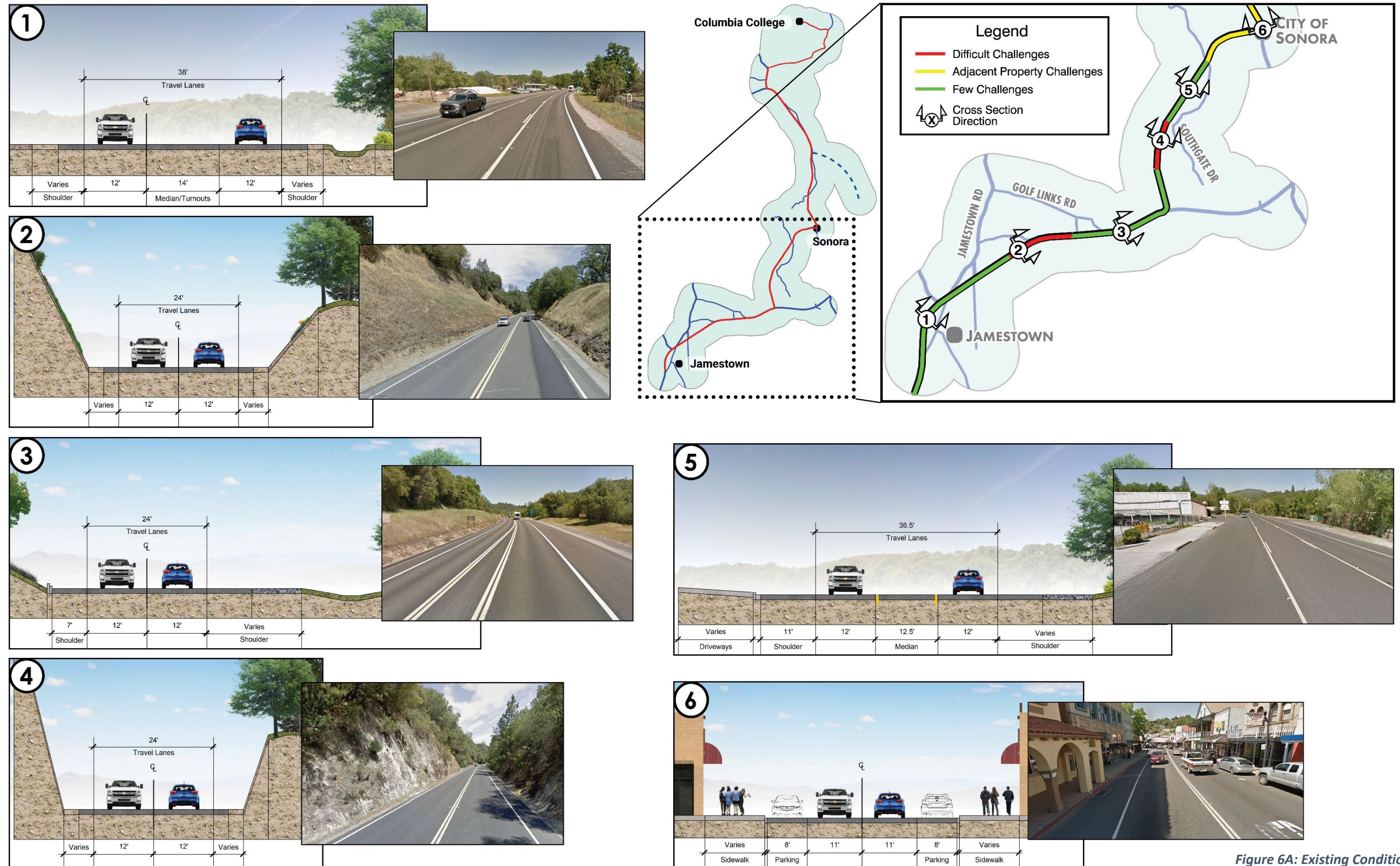
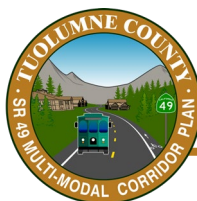


Figure 6A: Existing Conditions



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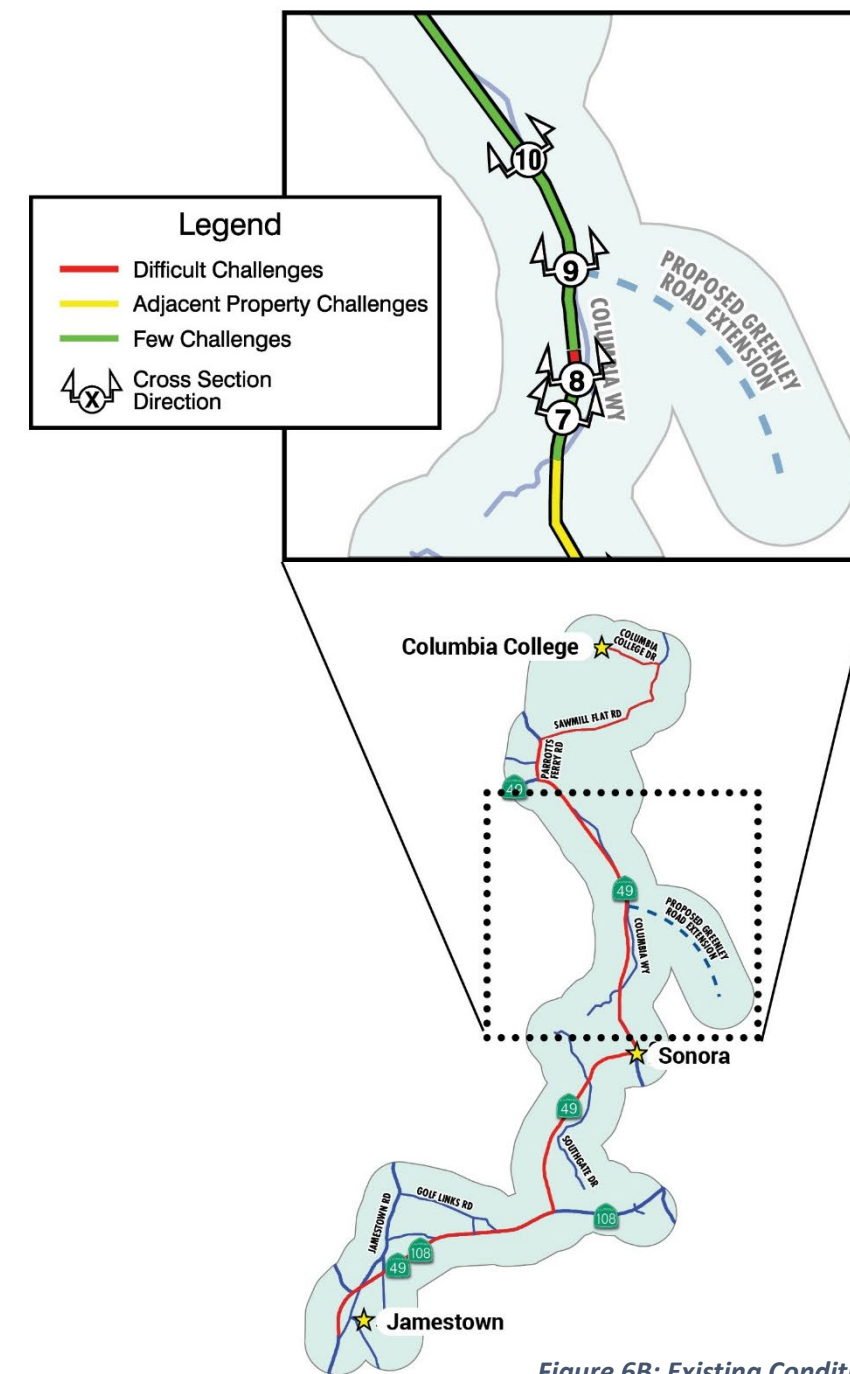
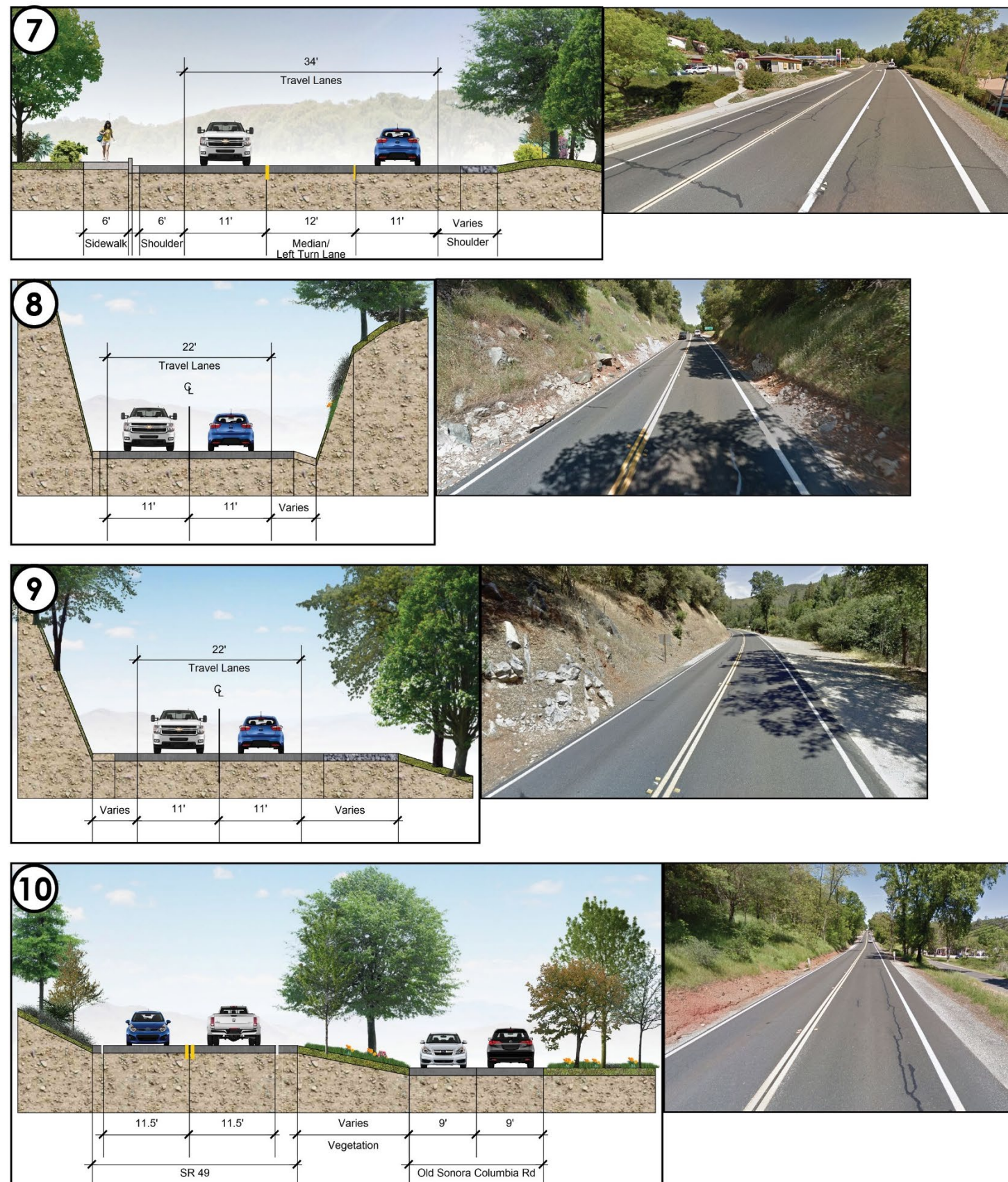


Figure 6B: Existing Conditions

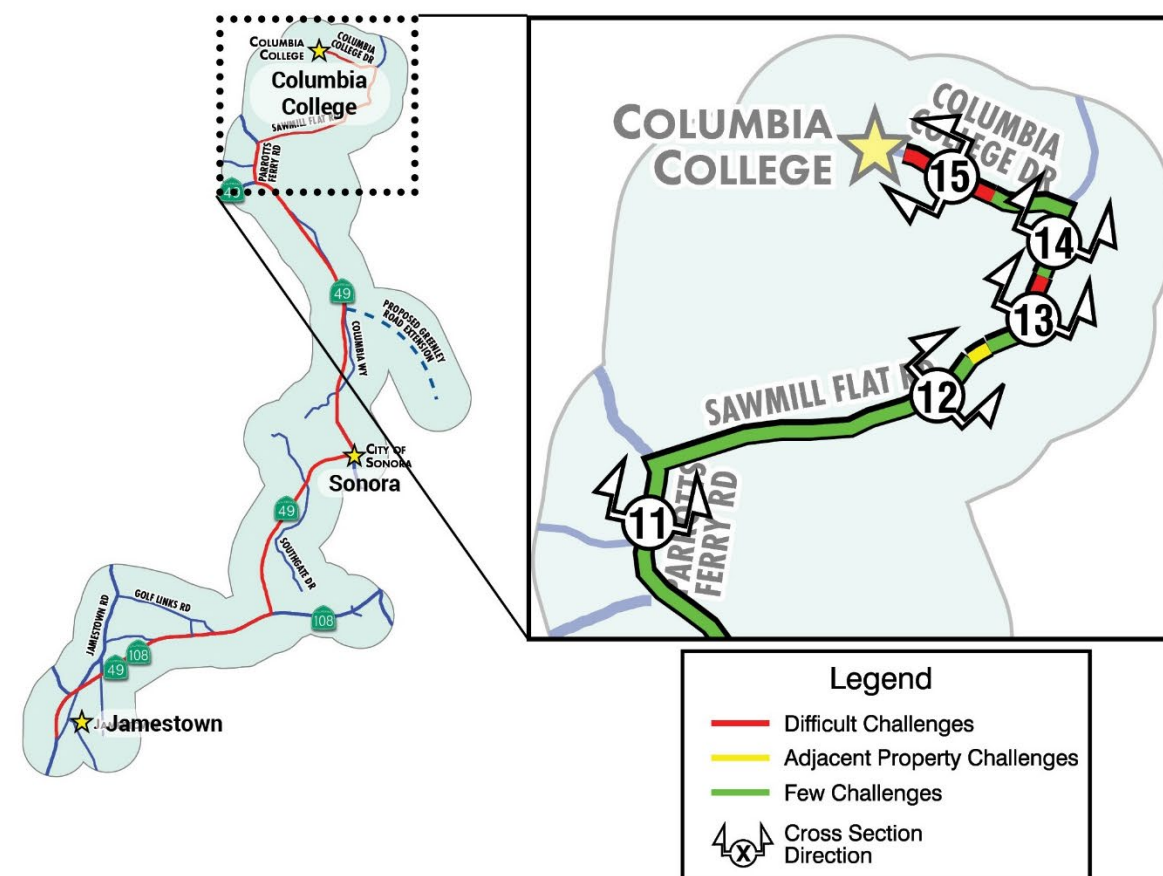
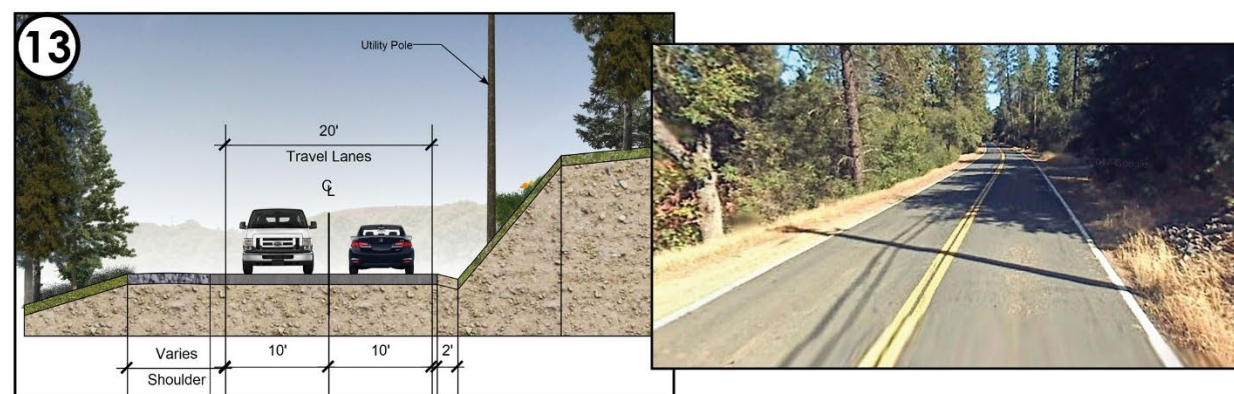
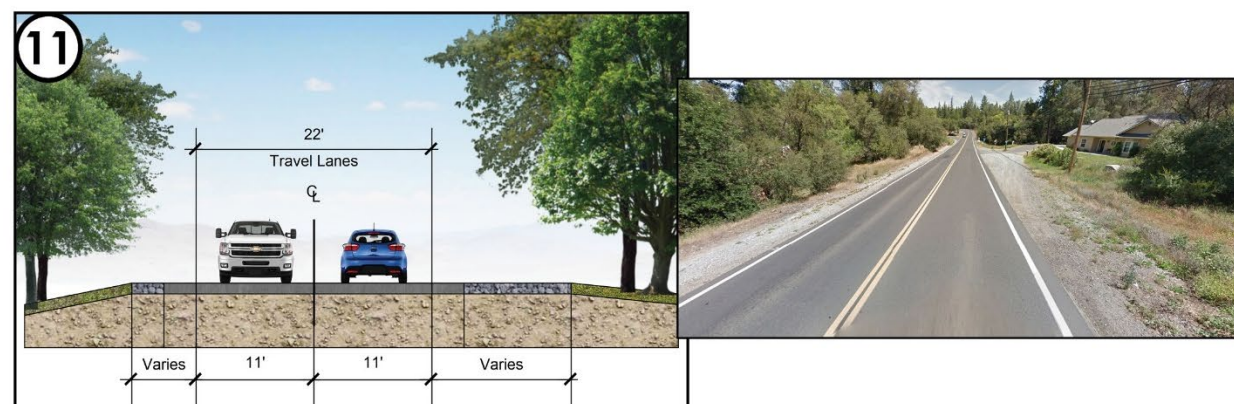
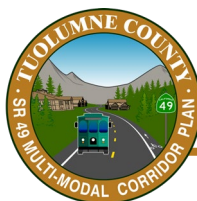


Figure 6C: Existing Conditions



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Bicycles and Pedestrians

Bicycle lanes and shared use paths are generally non-existent within the Corridor as depicted in the photo below. Sidewalks are available within the downtown areas of Jamestown, Sonora, and around Columbia College. Many of these sidewalks are older, do not meet current ADA standards, and have gaps in pedestrian access and/or utility conflicts. As part of the Plan bicycle and pedestrian counts were collected for a 24-hour period on April 27th and 28th, 2018. Downtown Sonora had the highest amount of pedestrian and bicycle activity at 25,000 pedestrians (Weekend) and 113 bicyclists (Weekday). According to 2006 to 2017 crash data obtained from Caltrans, the highest number of crashes was also found in downtown Sonora. There were two pedestrian fatalities where Forest Road, Woods Creek Drive and Southgate Drive intersect with SR 49, an area known to have significant safety challenges. The intersection provides access to the fairgrounds south of SR 49 and Dragoon Gulch trail system and the Community Park north of SR 49. An additional fatality was recorded at the Main Street intersection with SR 49 at the south end of Jamestown. A lack of adequate bicycle and pedestrian facilities coupled with a lack of properly marked highway crossings throughout the corridor are a major safety concern.

“In 1969, approximately 41 percent of children walked or bicycled to school, including almost 90 percent of children living within one mile of school. Today in Tuolumne County fewer than 15 percent of children report doing so. Engaging in active transportation when traveling to and from school can be a convenient way for students and their caretakers to be more physically active every day.”
RTP Healthy Communities Element.

Many streets within the Corridor, including SR 49, lack basic multi-modal improvements such as sidewalks, bicycle lanes, or crosswalks, creating difficult and dangerous situations for pedestrians. The lack of bike and pedestrian facilities discourage walking and biking within the community, especially for kids getting to school. The general absence of a cohesive bicycle network, in addition to recreational facilities that are located farther away than most residents are willing to travel, limits options for recreational biking, walking and exercise, as well. Bicycle and pedestrian safety at intersections, identifying opportunities for off-highway facilities, and overall bicycle and pedestrian connectivity will be the main focus for the SR 49 Multi-Modal Corridor Plan.



Figure 7: Crash Data Map

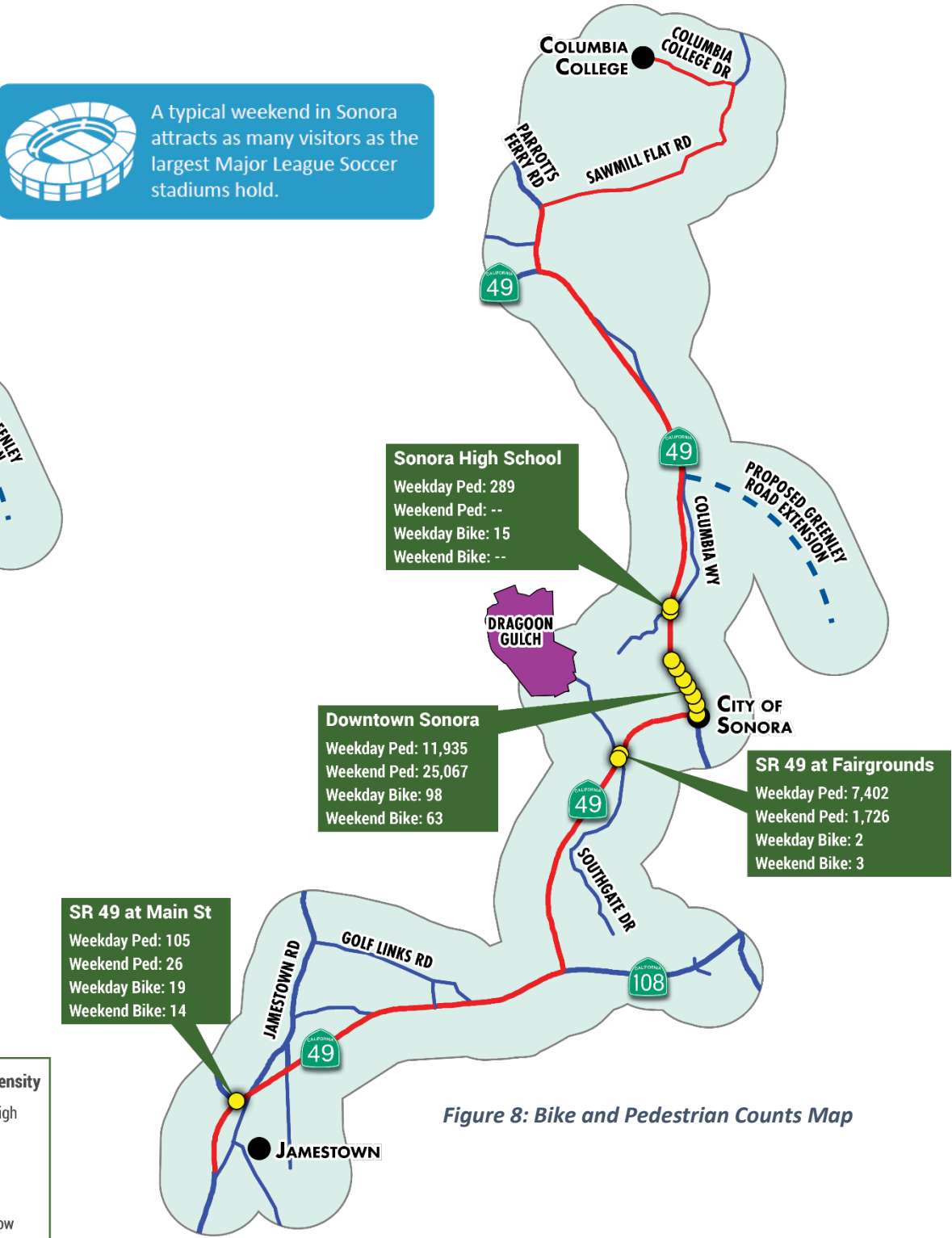
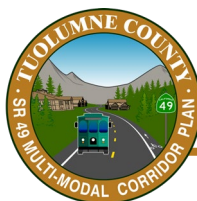


Figure 8: Bike and Pedestrian Counts Map



Transit Services

The Tuolumne County Transit Agency (TCTA) operates fixed route transit service in the study area. Tuolumne County Transit has three fixed routes—routes 1, 3, and 4 that service various stops in and around Jamestown, Sonora, and Columbia including Columbia College. Additionally, more regional special services such as YARTS (Yosemite Area Regional Transportation System) which offers seasonal service to Yosemite Valley and the SkiBUS operating seasonal service to Dodge Ridge Ski Resort also have routes that serve Sonora and Jamestown (and Columbia but not directly). The fixed routes are primarily operated on a schedule with 60+ minute headways Monday – Friday, while the YARTS and SkiBUS service are only operated seasonally. The existing fixed routes are described below with three-year average ridership shown in **Figure 9B**.

- ❖ **Route 1** (Sonora Loop) provides circulation within Sonora Monday-Friday 7am to 7pm at approximately 60-minute intervals.
- ❖ **Route 3** (Jamestown/Sonora/Columbia) provides circulation between Jamestown, Sonora, Columbia (including the college) Monday-Friday from 9am to 7pm at approximately 60-minute intervals.
- ❖ **Route 4** (Sonora/Columbia) provides circulation between Sonora and Columbia (including the college) weekdays at 180-minute intervals from approximately 6am to 6pm.

Dial-A-Ride services are also available to persons with disabilities and/or seniors daily. The general public may use the Dial-A-Ride service on Saturdays when fixed routes are not operating.

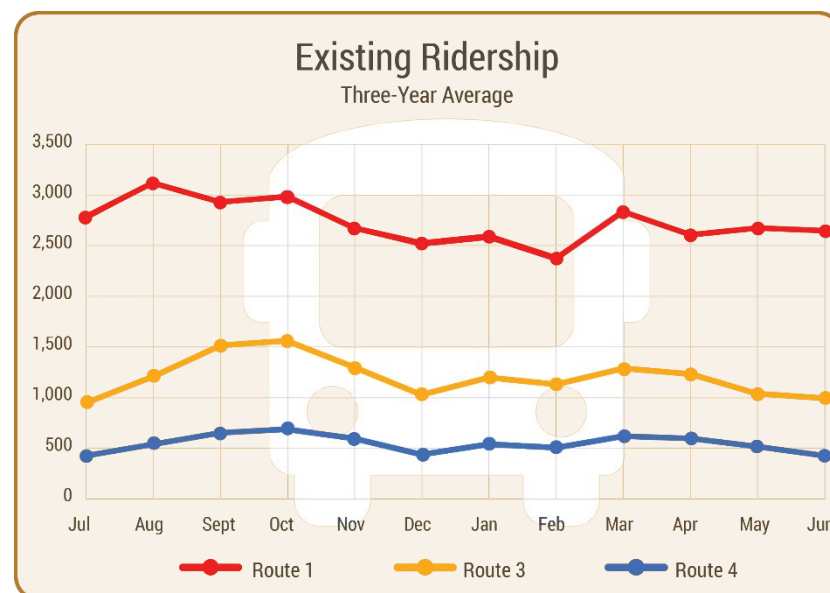


Figure 9B: Fixed Route Ridership

More recently, the TCTA has been experimenting with a tourist circulator, the Adventure Trolley, between Jamestown, Sonora, and Columbia on Saturdays from May to September. The Adventure Trolley is free and runs at 90-minute headways picking up at key tourist destinations. The two-year average ridership is depicted in **Figure 9C**.

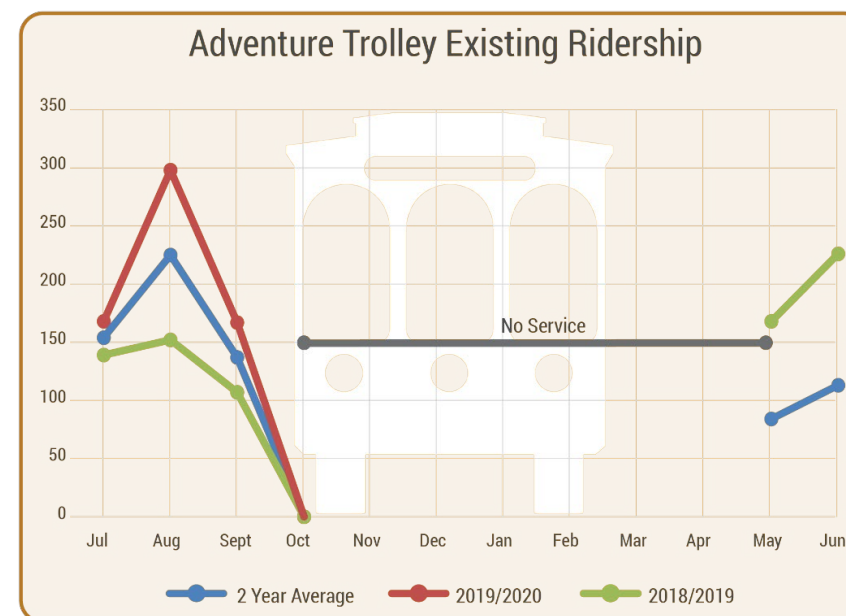


Figure 9C: Adventure Trolley Ridership

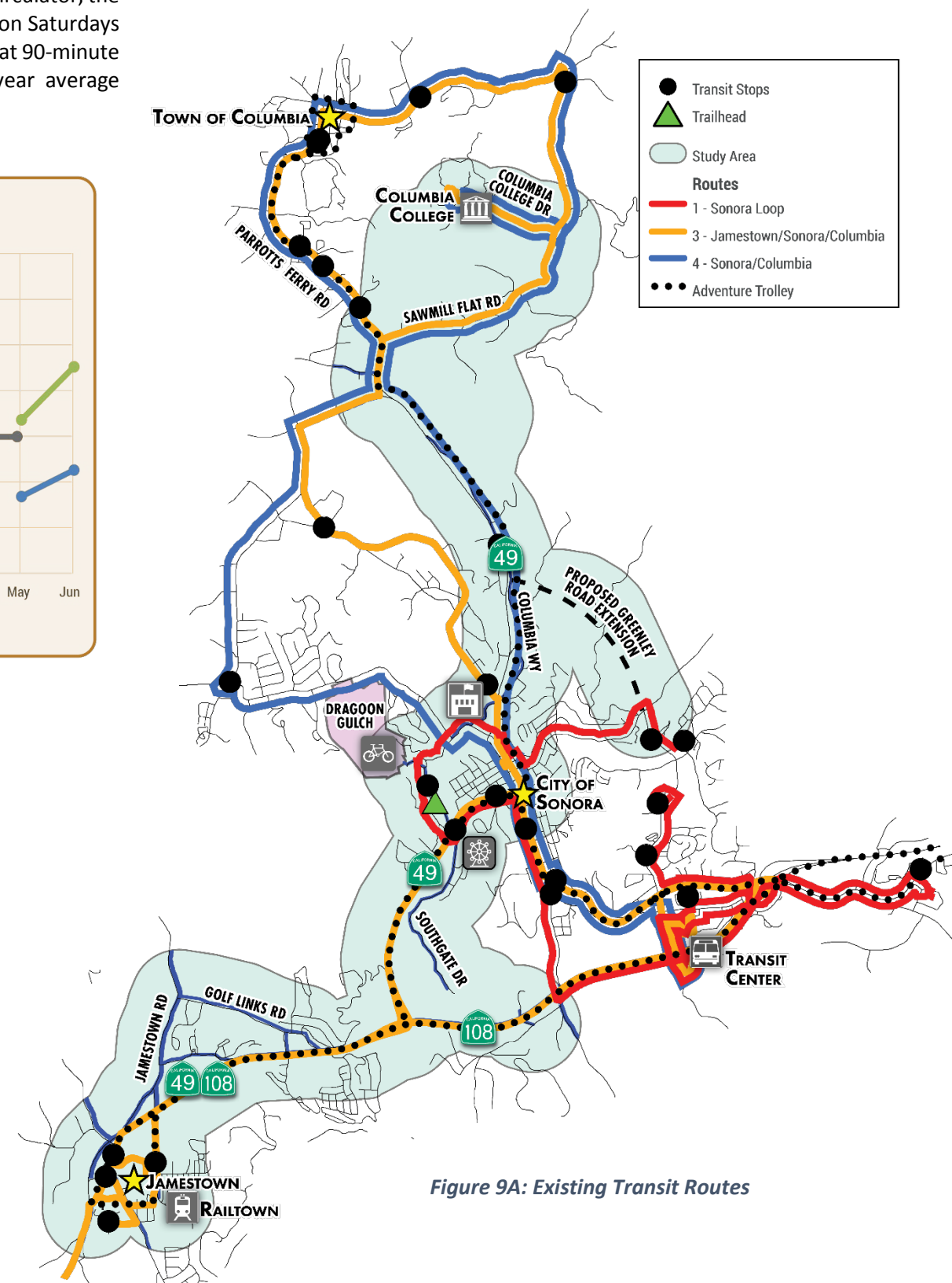


Figure 9A: Existing Transit Routes



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Parking Management

On-street parking along SR 49 in downtown Sonora (**Figure 10A**) adds to the congestion as vehicles wait in traffic to find a parking space. A parking analysis was completed with the *Vision Sonora Plan (2013)*, which indicated spaces closer to the downtown core are heavily utilized while a surplus of public parking is present in other parts of the corridor as shown in **Figure 10B**. An additional issue is employee parking downtown. Employees of downtown businesses are asked to purchase parking permits for lots in the downtown area. However, public spaces are free and incentives do not exist to encourage employees to park in designated parking lots. The corridor also experiences high visitation, resulting in high demand for parking areas within the downtown core areas. Limited parking signage exists leaving many off (main) street parking lots underutilized.



Figure 10A: SR 49 On-Street Parking



Figure 10B: Vision Sonora Parking Map

Formal Park-n-Ride lots are non-existent in the corridor. As is evident in the Jamestown area photo below (**Figure 11**), commuters who carpool tend to utilize informal parking areas as make shift Park-n-Ride lots. The issue with the current situation is primarily safety and accessibility. These informal parking areas are not designed for safe ingress and egress to SR 49, and are not designed to meet ADA standards, an impediment for transit services. Identifying appropriate areas for Park-n-Ride lots would provide a benefit to commuters carpooling, would allow an opportunity to create designated transit nodes with safe parking for visitors, and would provide an opportunity to connect parking areas to other multi-modal facilities.



Figure 11: Google Earth Photo, Existing Jamestown Park-n-Ride Area
















SR 49 Multi-Modal Corridor Plan

TUOLUMNE COUNTY TRANSPORTATION COUNCIL

Summary of Corridor Deficiencies & Strategies

Several areas of concern have been identified in the study corridor. **Table 1** provides a summary of the deficiencies identified herein, as well as conceptual opportunities and strategies to be considered to address these deficiencies and challenges.

Table 1 – Corridor Deficiencies & Strategies

	Bicycle Facilities			Pedestrian Facilities	
	Deficiencies	Strategies		Deficiencies	Strategies
	Lack of bicycle facilities throughout the corridor	Identify compatible bicycle facility opportunities within the SR 49 Multi-Modal Study		Lack of pedestrian facilities outside of downtown centers, especially along state highways	Identify compatible pedestrian facility opportunities within the SR 49 Multi-Modal Study
	Lack of active transportation connectivity between major land uses	Identify multi-modal connectivity opportunities to close gaps as part of the SR 49 Multi-Modal Study		Gaps in sidewalk network and undersized sidewalks	Identify and prioritize filling gaps and areas for reconstruction to complete the network and improve overall non-motorized network connectivity
	Transit			Vehicular traffic conflicts with on-street parking in downtown Sonora	Implement Vision Sonora wayfinding recommendations
	Deficiencies	Strategies		High pedestrian volumes and crossings in downtown Sonora	Implement Washington Street Study recommendations
	Infrequent transit service and few transit stops at key locations	Identify transit improvement opportunities within the SR 49 Multi-Modal Study		Pedestrian vs automobile accidents	Prioritize safety projects
	Lack of pedestrian infrastructure adjacent to bus stop locations	Improve overall sidewalk and bicycle connectivity including at bus stops (Connect the first and last mile)			
	Highways			Schools	
	Deficiencies	Strategies		Deficiencies	Strategies
	Travel time delay through congested areas	Implement Caltrans Corridor Study recommendations. Provide multi-modal travel choice within the SR 49 Multi-Modal Study.		Roadway and intersection safety issues around Sonora High School	Investigate Safe Routes to School strategies within the SR 49 Multi-Modal Study
	Intersections that do not meet level of service standards	Implement Caltrans Corridor Study recommendations		Numerous direct access driveways throughout	Develop a future Access Management Plan
				Lack of students walking and bicycling to school	Investigate Safe Routes to School strategies within the SR 49 Multi-Modal Study



Current Regional Planning Efforts

Land Use Planning and the Multi-Modal Transportation Link

The 2018 Tuolumne County General Plan update (the General Plan) outlines goals, policies and implementation programs to guide Tuolumne County's development through 2040. The General Plan updates the 1996 General Plan and builds upon the work first initiated in 2015.

A key element of the General Plan is the preferred growth scenario known as the Distinctive Communities Growth Scenario (aka. Identified Communities and Defined Communities) that establishes development patterns that take into account the effects on the transportation system, housing, the local economy, quality of life, natural resources and the environment. The Distinctive Communities Growth Scenario concentrates new development within 18 established community areas, encouraging increased density and infill to avoid sprawl. This managed development approach reflects the vision and values of the communities, promotes efficient public services, enhances the unique nature of each community and promotes environmental stewardship, all while reducing vehicular trips and reducing VMT.

The Distinctive Communities Growth Scenario is consistent with the implementation of California SB743, signed in 2013, that promotes congestion management and greenhouse gas reduction through infill development and the promotion of active transportation. This cohesion between the Distinctive Communities Growth Scenario and the guidelines set forth in SB743 allow for development flexibility consistent with the General Plan and a framework for overall VMT reduction.

The SR 49 Multi-Modal Corridor Plan is a critical link in the land use blueprint outlined in the Distinctive Communities Growth Scenario and the vision of SB743 by providing needed multi-modal infrastructure and active transportation opportunities that connect several of the most populated Distinctive Communities, as illustrated in **Figure 13**. These development nodes currently lack sufficient multi-modal connectivity to fully realize the goals of SD 743 and the community vision set forth in the General Plan. This link among related state and local efforts is illustrated in **Figure 12**.



Figure 12: Land Use and Multi-Modal Transportation Link

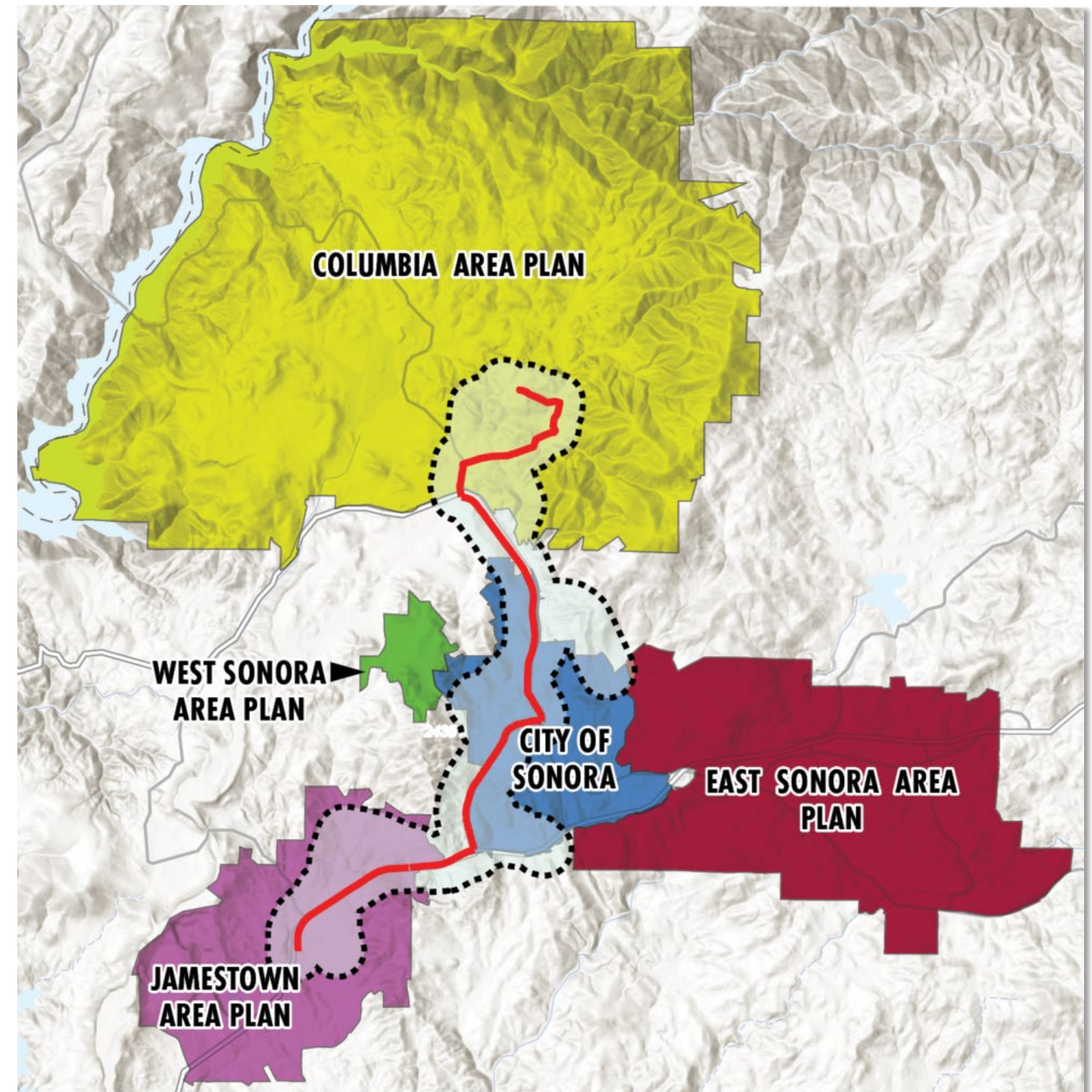


Figure 13: Active Transportation Connectivity for the Distinctive Communities Growth Scenario



SR 49 Multi-Modal Corridor Plan

TUOLUMNE COUNTY TRANSPORTATION COUNCIL

Transportation Planning

The current focus of several existing regional plans for this corridor is to widen SR 49 and SR 108 to five lanes between S. Main Street and Stockton Street in several locations within the study area. Congestion relief and safety improvements are the focus of many of these planned projects. SR 49 currently extends through downtown Sonora and creates a bottleneck effect due to the narrow roadway and closely-spaced intersections.

Additional planning efforts: Active Transportation Plans, Dragoon Gulch Connector Study and Vision Sonora are focused on the integration of Complete Streets into the corridor. The Caltrans Complete Streets Implementation Plan encourages transportation facilities to be planned, designed, and operated to provide safe mobility for all roadway users. To improve roadways to follow this design principle, a number of multi-modal projects are proposed within the Regional Transportation Plan that include accessible pedestrian amenities, transit access, and bicycle infrastructure.

The *Vision Sonora Plan*, adopted in 2013, recommended a number of transportation improvements to improve congestion and circulation as well as safety improvements and Complete Streets elements.

The SR 49 Multi-Modal Corridor Plan honors the existing regional planning work and builds upon the multi-modal elements of these efforts. A key strategy of this is adding multi-modal recommendations to incorporate into the existing projects, as well as focusing on a connected Class I bike facility network.

Figure 14 identifies many of these interrelated efforts and provides a map illustrating the location of these proposed projects within the study area.



Multimodal

1. Intersection & Complete Streets Improvements - SR 49 and Columbia Way/ School St/North Washington St
2. Stockton - Washington Downtown Transit & Pedestrian Accessibility Improvement Project
3. Complete Streets Improvements at SR 49 - Columbia Way - North Washington St.
4. Jamestown Road - Capacity Improvements
5. Install Bicycle Signs along State Highways
6. Construct a Park N Ride Facility - Sonora
7. Jamestown Park-N-Ride Facility
8. Parrotts Ferry Rd @ SR 49 Intersection Improvements
9. South Washington Street Improvements
10. SR 49 and Southgate Drive Intersection and Complete Street Improvements
11. South Washington South Gateway Corridor
12. North Washington North Gateway Corridor
13. Washington Street Improvements in the Historic Downtown Core

Roadway Capacity

14. SR 108/49 Widening to Five Lanes - Stage 1 - from South Main Street to Fifth Ave
15. SR 108/49 Widen to Five Lanes - Stage 3 - from Fifth Ave to Stockton St
16. SR 108/49 Widen to Five Lanes - Stage 3 - from Chicken Ranch Rd to South Main Street
17. SR 49 Widen to Five Lanes - from Parrotts Ferry Rd to new Greenley Rd Extension

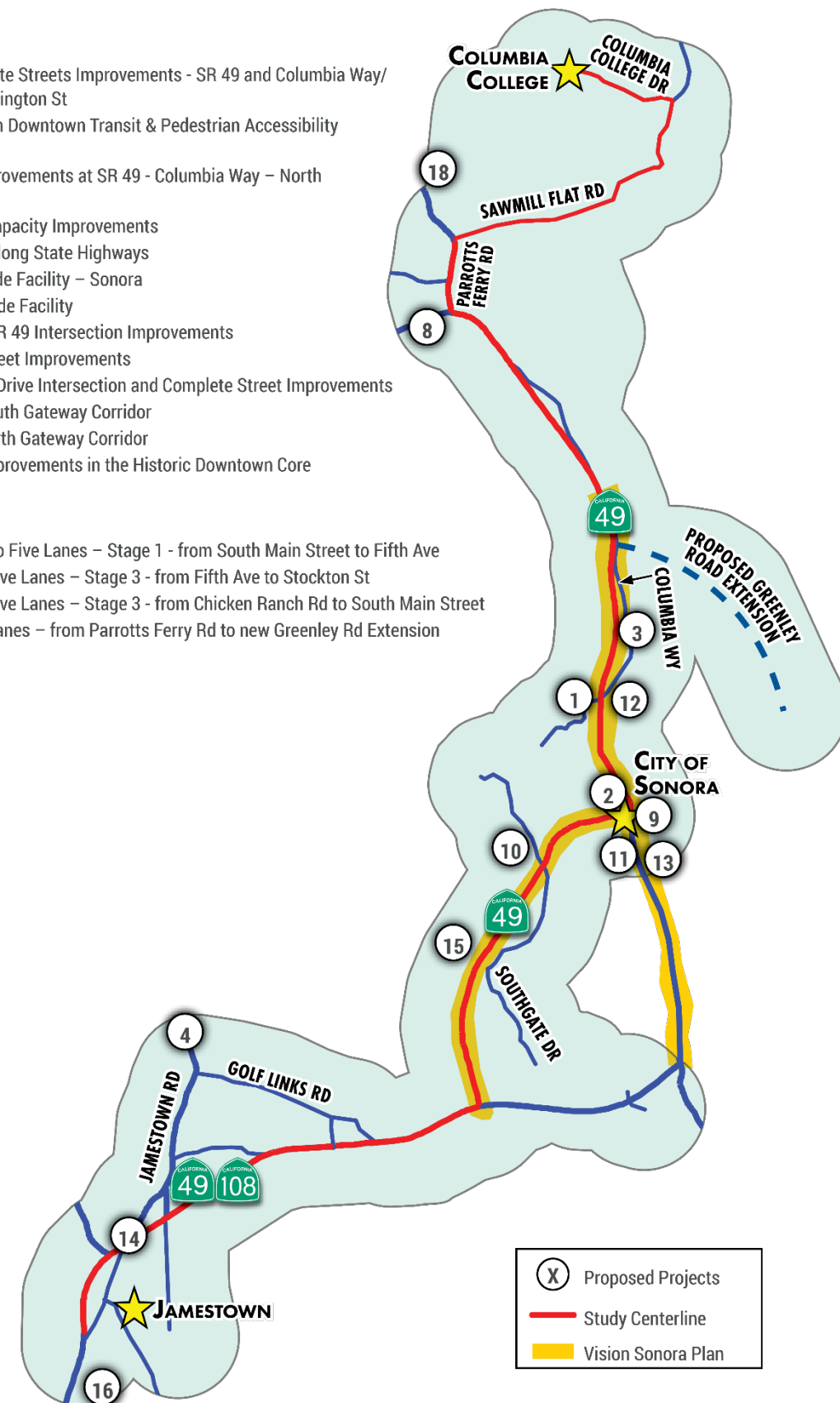
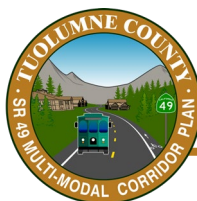


Figure 14: Existing Regional Transportation Projects Map



SOLUTIONS & CONCEPTS

The study area would benefit greatly from adding non-motorized infrastructure, especially bicycle and pedestrian facilities along SR 49 between Jamestown and Sonora and Sonora to Columbia. The opportunity to connect these defined communities with multi-modal facilities would allow both residents and visitors to safely move between these areas without the need for a vehicle, thereby reducing congestion, improving air quality and overall health of the communities. The relatively short distances along with marginal grades makes these movements ideal if users are provided a sense of security. Additionally, with the growing popularity and decreasing price of e-bikes, bicycle use between the defined communities becomes a more viable option for a greater number of users.

The solution for the SR 49 corridor is twofold; identify roadway solutions to improve traffic congestion and marry them with non-motorized facilities that currently don't exist (**Figures 15A-C**). The solution provides cost benefits to both project types and creates a complete project that serves all users of the corridor.

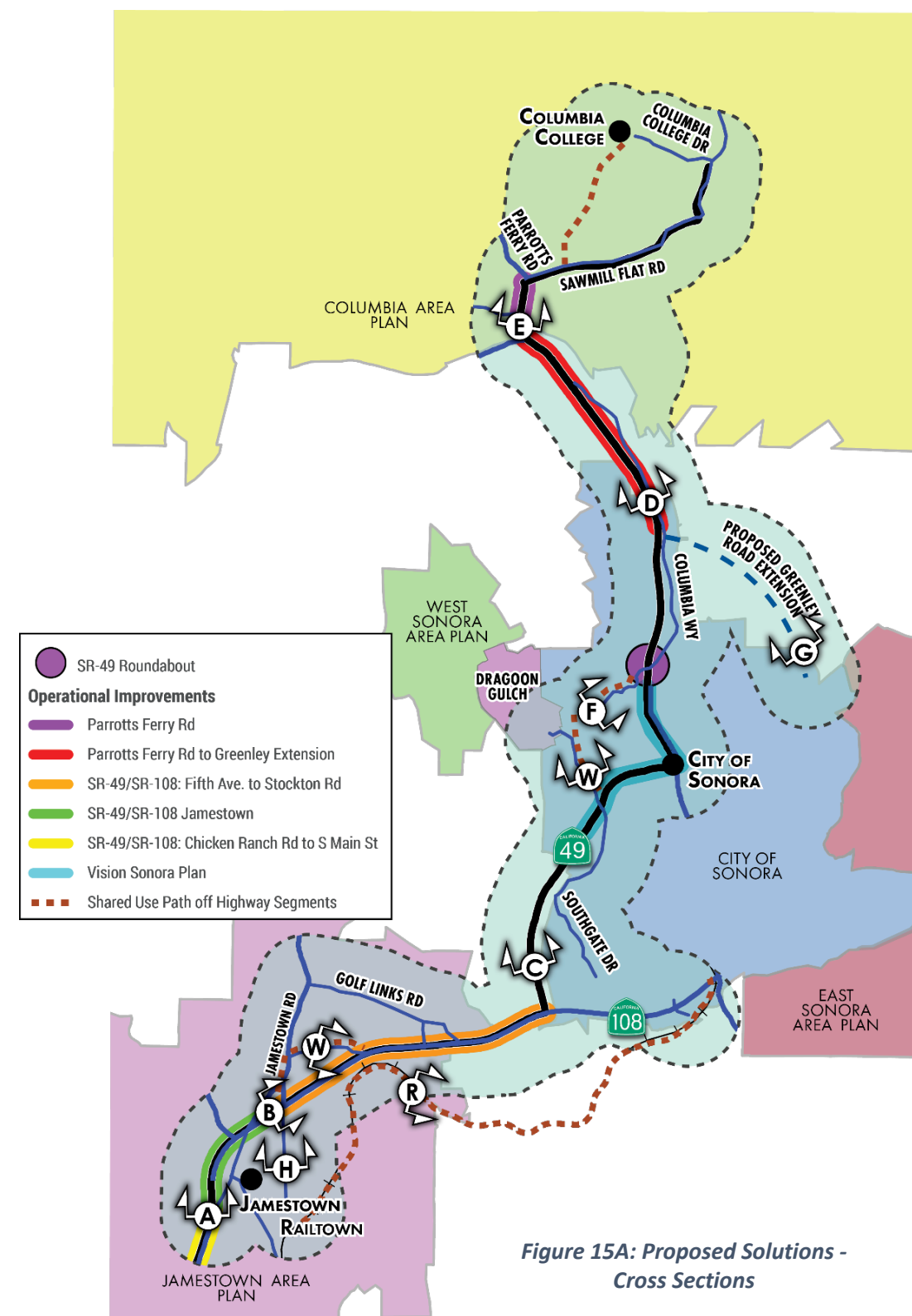
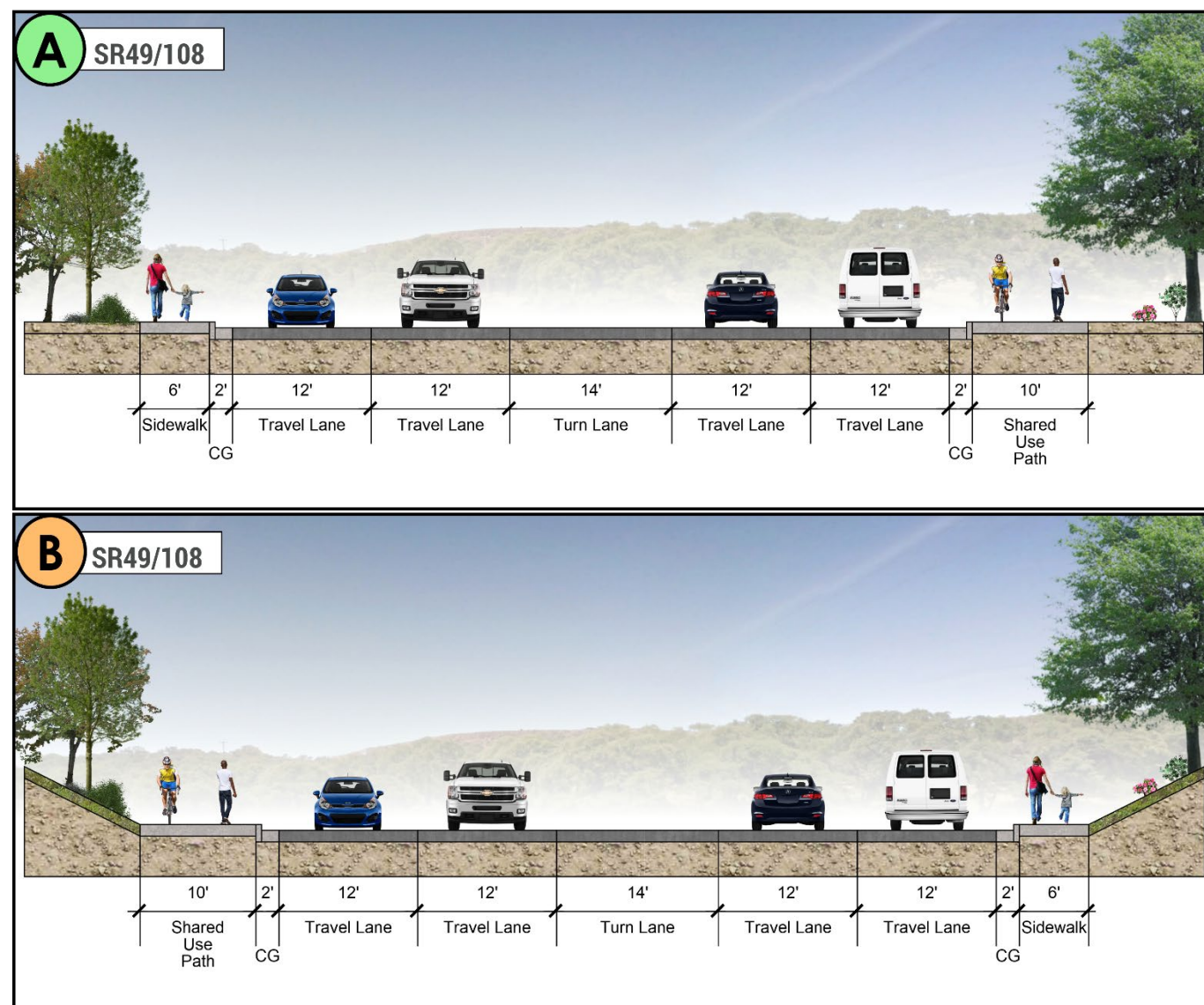


Figure 15A: Proposed Solutions - Cross Sections

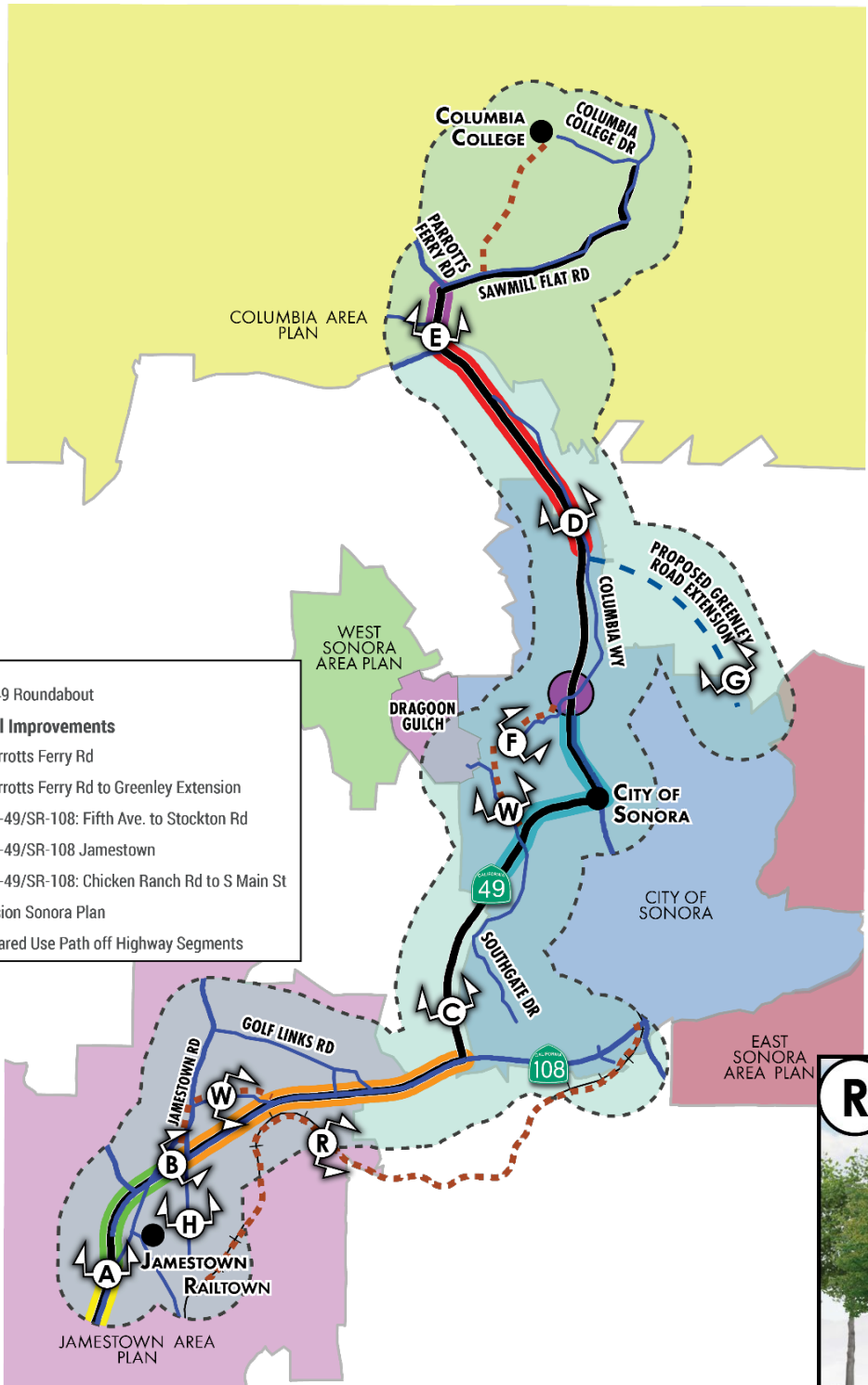
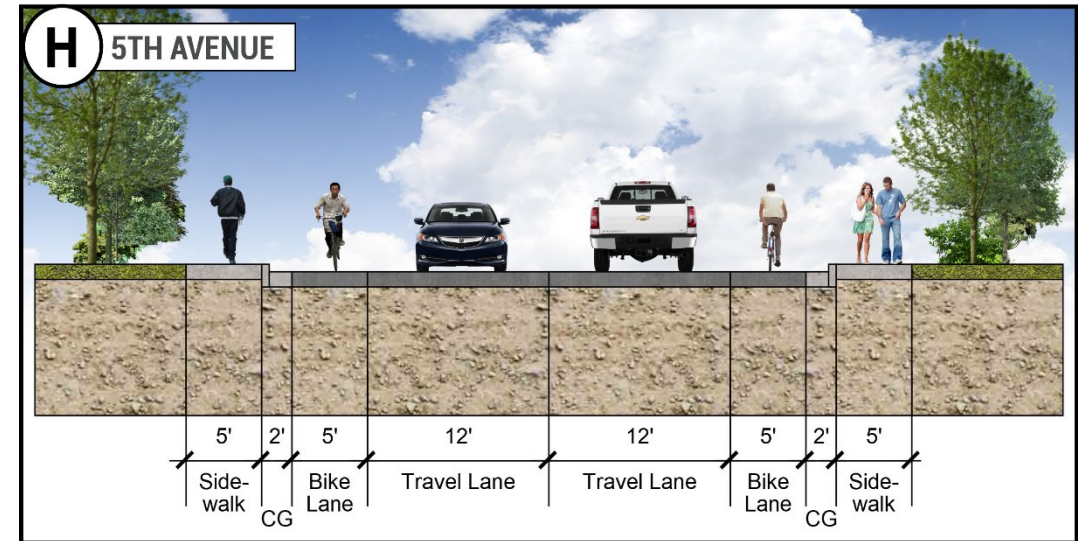
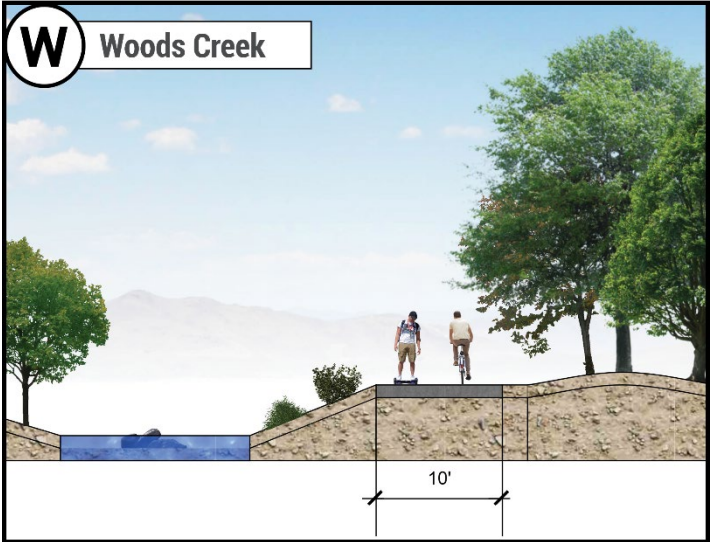
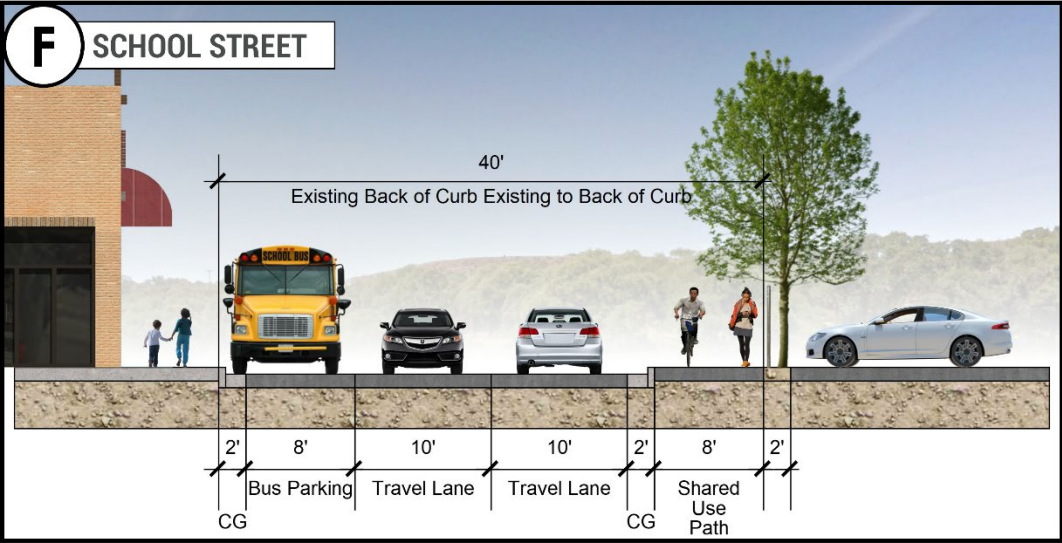
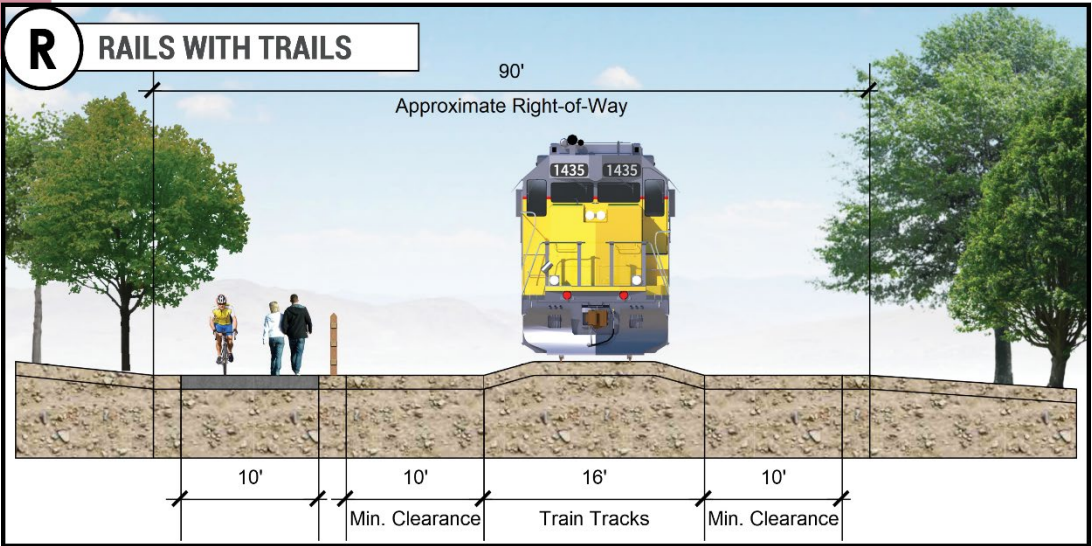
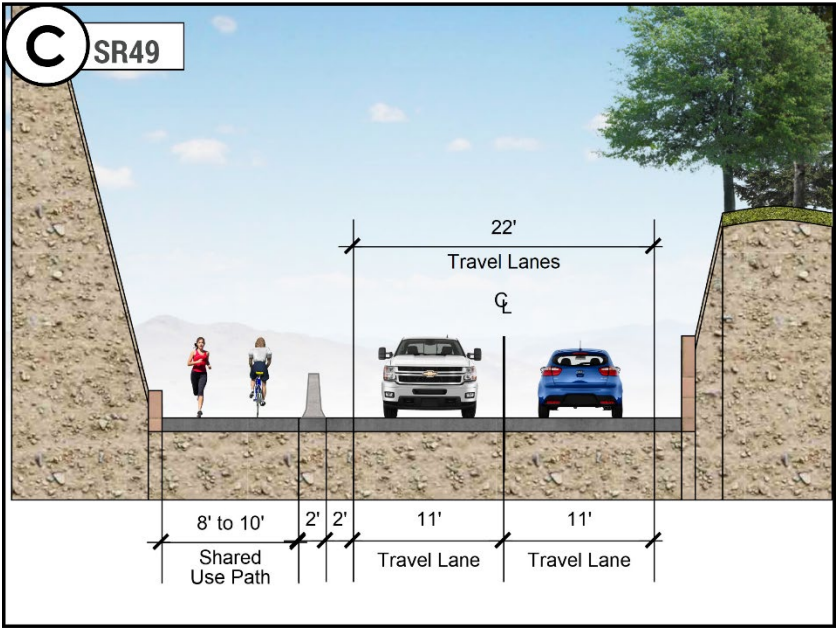
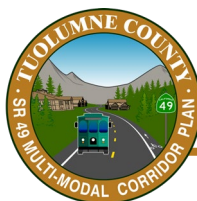


Figure 15B: Proposed Solutions - Cross Sections





SR 49 Multi-Modal Corridor Plan

TUOLUMNE COUNTY TRANSPORTATION COUNCIL

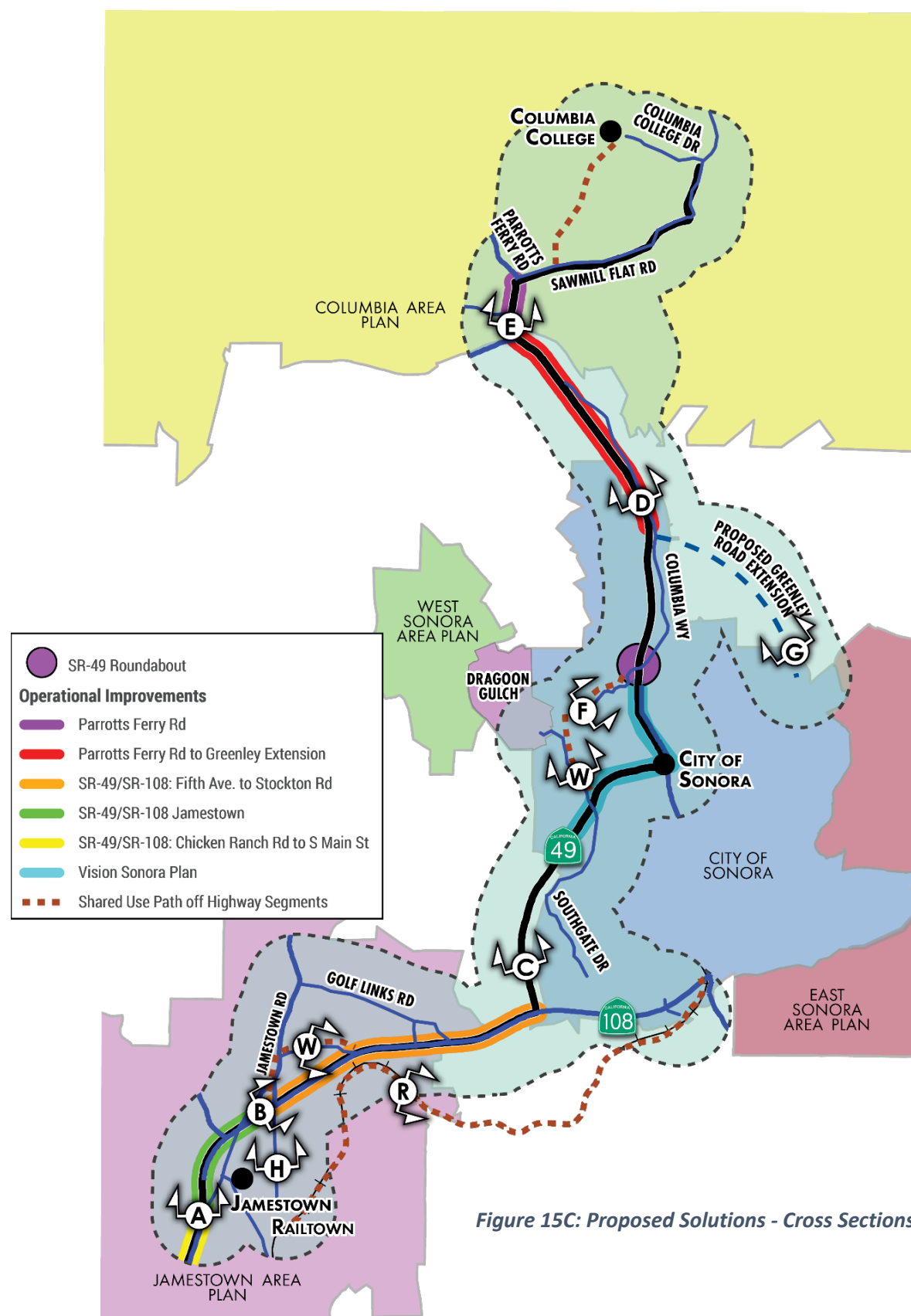
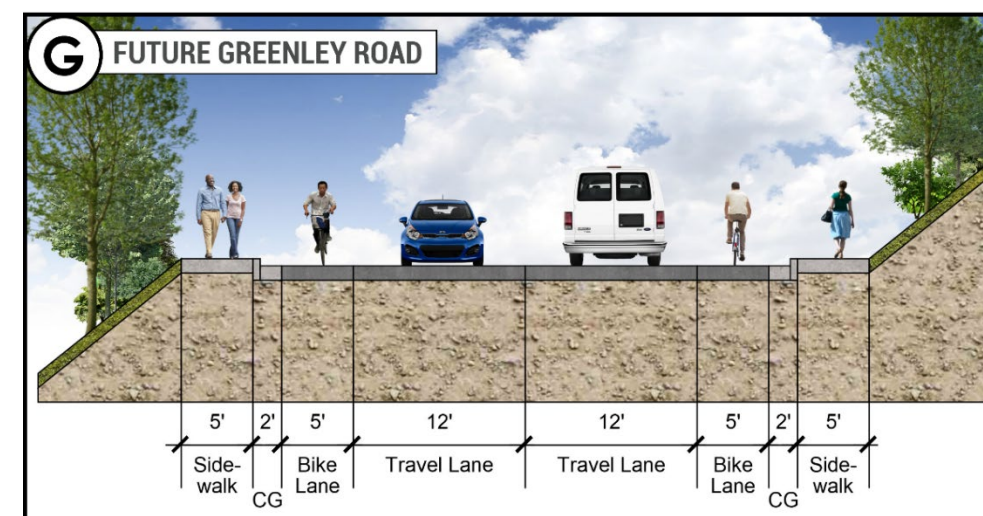
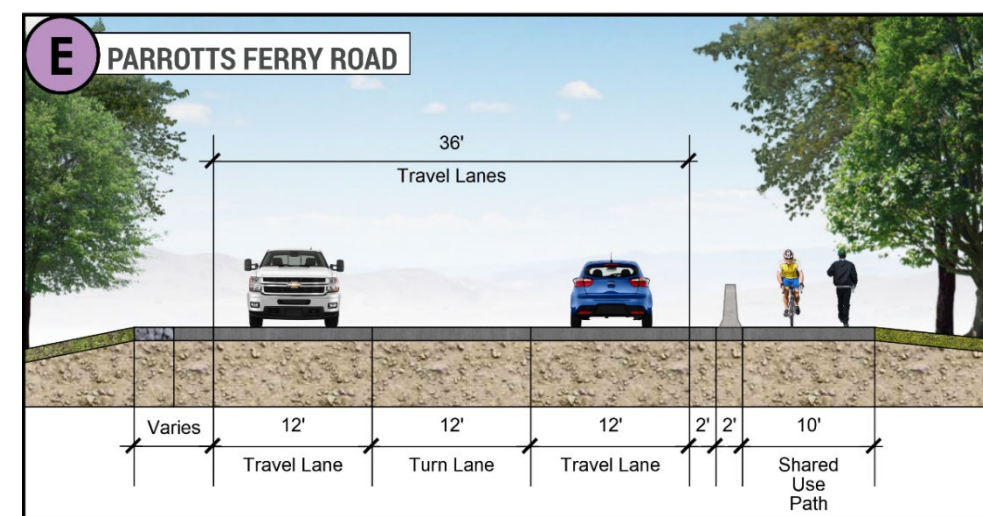
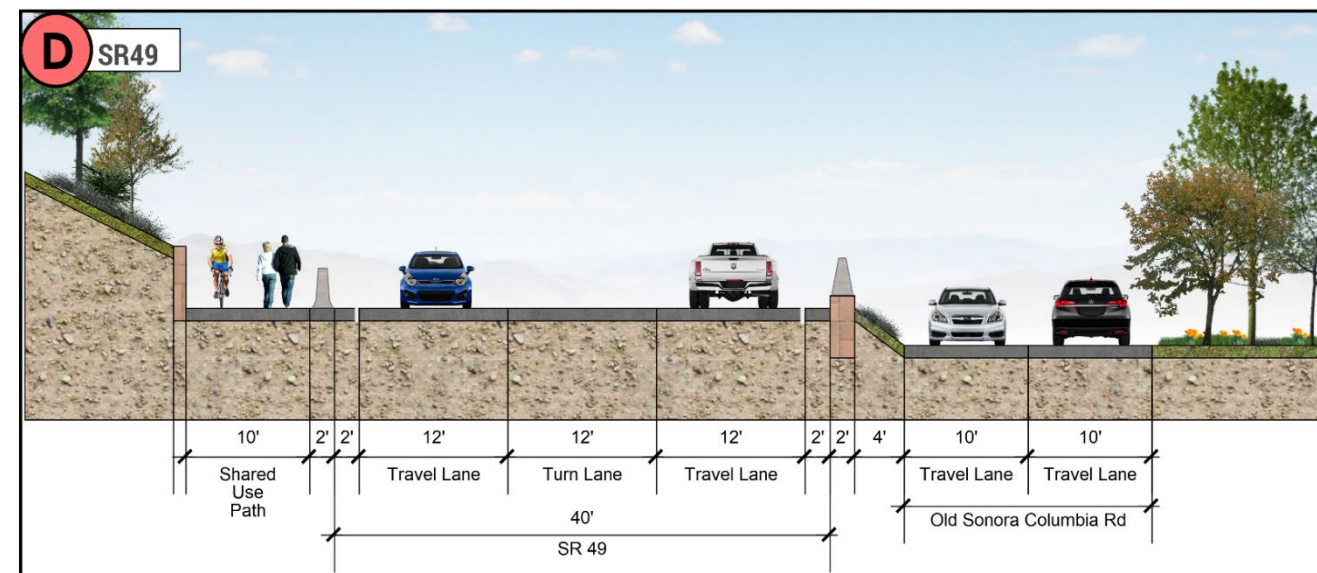


Figure 15C: Proposed Solutions - Cross Sections





Non-Motorized Transportation

Shared Use Path and Connecting Bike Facilities

Class I facilities, also known as a “Shared Use Path” are stand-alone and/or separated multi-modal travel ways that provide the highest level of user safety and comfort. Class I facilities are typically paved paths that can be used by both bicyclists and pedestrians alike. *The Caltrans Highway Design Manual, Sixth Edition (HDM)* suggests these facilities “...should offer opportunities not provided by the road system. They can either provide recreational opportunity, or in some instances, can serve as direct high-speed commuter routes...”. New multi-modal connectivity within the study area is focused on connecting key origins and destinations for both recreation and transportation. However, the study area includes numerous existing challenges that makes connectivity difficult. These challenges include mountainous topography, steep roadside grades, narrow streets in downtown areas, roadside residential parking, and limited right of way. Given these constraints, the proposed Class I improvements best balance opportunities with what is reasonably possible.

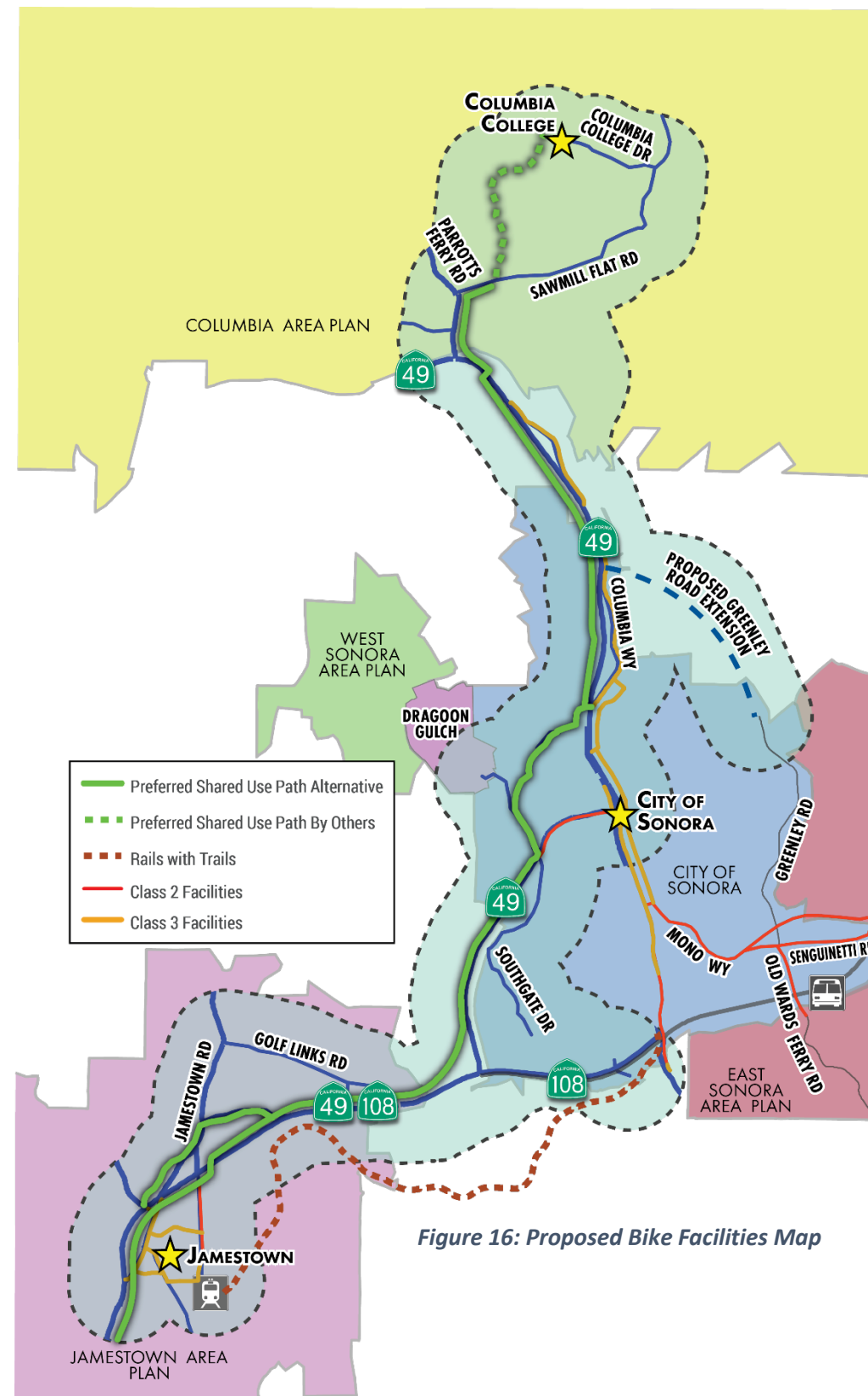
A Class I facility planning-level alternatives analysis was conducted to determine the preferred alignment, which can be found in **Appendix B**.

Sonora to Jamestown Shared Use Path Connectivity

Connecting the communities of Sonora and Jamestown is paramount to any multi-modal strategy given the amount of tourist visitation and their similar characteristics. Tourists traveling to or stopping through the area are drawn to the historic character and commercial attractions in both Sonora and Jamestown. Serving this large, integrated market is a primary focus.

Two general options for shared use paths are considered including options that follow SR 49 and an option that follows the railroad. The SR 49 options provide direct connectivity to the historical downtown Sonora, while the railroad option provides an opportunity to connect Jamestown to East Sonora, as well as providing a recreation opportunity through the Rails-with-Trails program, allowing a multi-modal experience of the historic rail line. The cross sections for the various segments are identified in **Figures 15A-C** (pages 15-17).

SR49 Path: The multi-use path would be barrier-separated from vehicular traffic as shown in **Figures 15A-C** and work in concert with proposed sidewalks and bike lanes on SR 49 near Jamestown. The roadside path option utilizes public right of way already designated for transportation purposes and provides the most direct multi-modal





Sonora to Columbia College Shared Use Path Connectivity

Connecting Sonora to Columbia College provides needed multi-modal options between downtown Sonora, area residences, and a major destination in the college. The college offers many community-oriented classes, sporting events, recreation facilities, hosts events and provides employment opportunities. This connectivity (heavy in mixed uses) would also provide a backbone to eventually connect to historic downtown Columbia in the future.

SR 49 Path: The multi-use path would be barrier-separated from vehicular traffic, as shown in **Figure 15C** (page 17), extending from Sonora High School to Parrotts Ferry Road and up to Sawmill Flat Road. The short-term solution includes utilizing a Class III bike route along Old Sonora Columbia Road with a Class I facility beginning at the northerly SR49/Old Sonora Columbia Road intersection just south of the Parrotts Ferry Road intersection. The full Class I section would be longer term along SR 49 and would be constructed with the larger roadway improvements.

Columbia College Path: The College is proposing a minimum 10-foot wide multi-use path that can also be used as emergency access through an undeveloped portion of the property connecting Columbia College, near the Oak Pavilion parking area, to Sawmill Flat Road. Portions of this wooded area is already used today as an informal walking and cross-country resource and has limited mountain biking. The College is moving forward with this segment as a standalone project, that will be a future connection to the facility described herein.

Class II Facility Connections

The Caltrans HDM describes Class II facilities as bike lanes. Bike lanes are “intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each.” Bike lanes are generally not recommended for SR 49 given high vehicular speeds and constraints limiting the ability to provide buffers between vehicles and cyclists. However, locations do exist where bike lanes can be safely incorporated providing critical multi-modal connectivity. These are identified on **Figure 16** (page 18).

Stockton Road: SR 49 west of Washington Street is also known as Stockton Road in the City of Sonora. West of the intersection with Washington Street, Stockton Road consists of a four-lane section until it transitions to a three-lane section near the Save Mart store. This short segment is being considered for a lane reduction to a three-lane section. As part of this effort, bike lanes could be incorporated. Although the result would be a short bike lane section, it would serve one of the highest activity locations in the study area.

Mono Way: Mono Way connects downtown Sonora with commercial centers near Greenley Road. Furthermore, Greenley Road south of Mono Way connects to the Tuolumne Transit Center, the regional bus hub. Bike lanes along these roadways, as well as extending to and on Sanguinetti Road would provide important connectivity from the Study Area to both commercial attractions and transit intermodal opportunities.

Class III Facility Connections

Class III bike facilities are shared routes where cyclists intermix with vehicles and are generally used on low speed roadways. The Caltrans HDM suggests that Class III facilities be used to “provide continuity to other bicycle facilities” such as Class I and II facilities, or “designate preferred routes through high demand corridors.” Given the existing constraints such as limited right of way, on-street residential parking, and narrow roadways through both Jamestown and Sonora, Class III options are the most prevalent opportunities to provide support and guidance for cyclists. Several opportunities to connect and build-out a bicycle network have been identified through the use of sharrows. Sharrows are pavement markings that symbolize preferred routes for cyclists intermixed with vehicular traffic and inform drivers that travel lanes are to be shared with cyclists. **Figure 16** (page 18) identifies key connections between origins and destinations and between higher class bicycle facilities that could benefit from the installation of sharrows and fill out a bicycle network within the study area.



Pedestrian Facilities

As noted, the major destinations of Jamestown, Sonora, and Columbia College generally have existing sidewalks along commercial centers with some exceptions. **Figure 17** identifies proposed sidewalk locations that will further enhance the existing network by closing important gaps. Much of the residential areas of these communities do not incorporate sidewalks, however, the topographic and built environment severely limit what is feasible, therefore, many of the proposed connections are focused on connecting commercial areas and key connections within communities.

In addition to the proposed sidewalk gap closures, the Class I facilities proposed for bicycle connectivity also serve pedestrians and create new connectivity between the defined communities, employment, and visitor attractions within the study area. These Class I multi-use paths work in conjunction with proposed sidewalk on one side of SR 49 through Jamestown

and north of Sonora where pedestrian use along the roadway shoulders is most common. These important segments along with other proposed pedestrian facility opportunities are shown in **Figure 17** below.

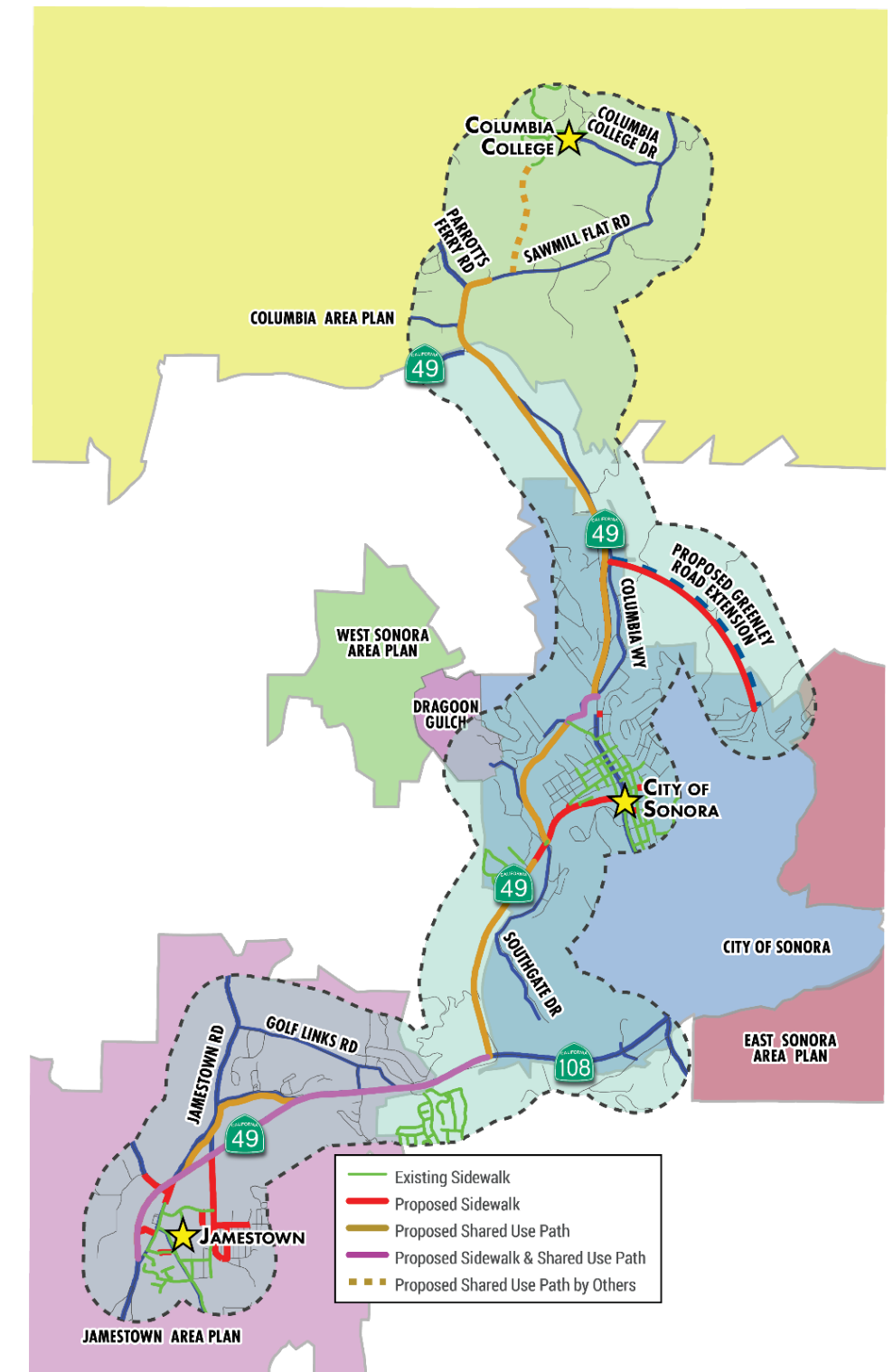
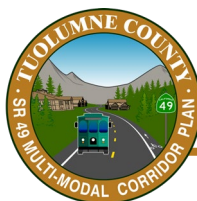


Figure 17: Proposed Pedestrian Facilities Map



Transit/Park-n-Ride Facilities

The Adventure Trolley has continued to increase ridership as it becomes more well-known and begins to take shape as a complementary attraction for the area. To increase transit ridership in the corridor, it is recommended to keep building upon the Adventure Trolley and phasing in expansions and improvements to support that service.

Ultimately the Adventure Trolley could become the backbone transit circulator on a more regular basis with a focus on serving less stops than the other fixed routes and focused on key locations with 30 to 60-minute headways. One option to expedite this would be to phase out a less utilized fixed route service with the Adventure Trolley Monday – Friday to better accommodate commuters and focus on visitors Saturday and Sunday. A proposed circulation pattern and key stops for future consideration are provided in **Figure 18**.



To support the Adventure Trolley and other fixed route services, well identified Park-n-Ride facilities will be key to improving ridership. Proposed Park-n-Ride locations are identified in **Figure18**. The Park-n-Ride lots should include amenities that will help promote users to park outside of the corridor and utilize transit. The amenities may include information kiosks with maps, technology to purchase transit tickets and check the status of the buses, covered waiting areas and ADA improvements, and connect the Park-n-Ride lots with other multi-modal facilities such as the shared use path. Marketing the Adventure Trolley as part of the attractions of the area to visitors will help grow the ridership and reduce vehicular congestion. Promoting the service outside of the area where visitors live will also help grow the service.



Opportunities to improve the Adventure Trolley

- Formal Park-N-Ride areas branded for the Adventure Trolley
- Increase operating days to Thursday – Sunday to coincide with tourists
- Look at opportunity to possibly phase out a less utilized route and operate the Adventure Trolley on a more regular basis
- Continue to keep the Adventure Trolley route focused on key stop locations to keep headways down and the service more reliable
- Reduce headways to 30-60 minutes
- Promote the service outside of the region

Parking Strategies to Resolve Congestion

- ✓ Designate downtown core parking lots for public parking
- ✓ Provide wayfinding signage to underutilized parking areas and areas of interest
- ✓ Construct Park'n'Ride lots to encourage transit, walking or biking
- ✓ Incentivize the use of employee parking spaces/ permits and improve existing employee parking lots
- ✓ Maintain parking limits and encourage short-term versus long-term parking in downtown core
- ✓ Brand parking lots so users know where to go and add technology to identify parking availability

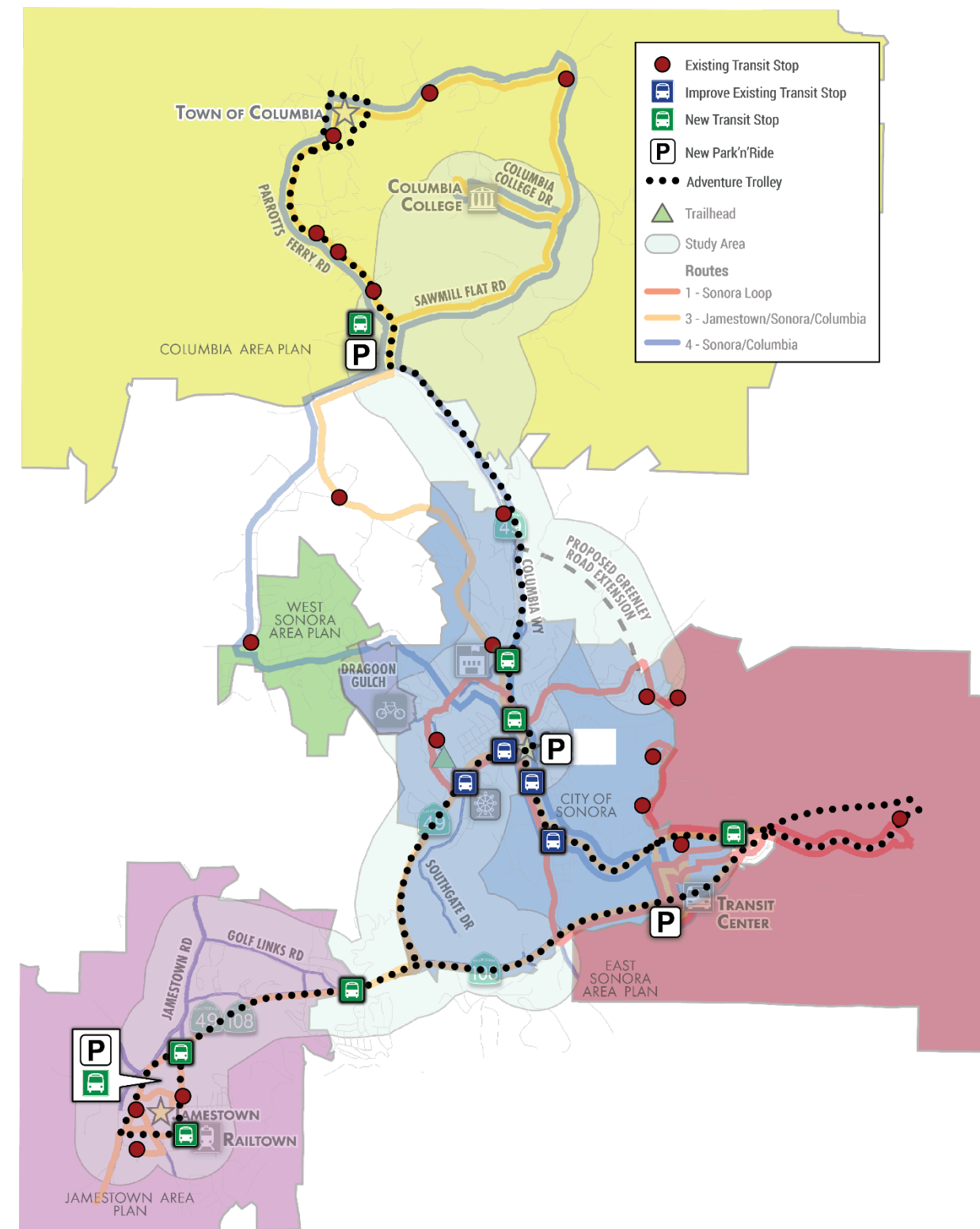


Figure 18: Proposed Transit Stops and Park-n-Ride Lots



Motorized Transportation

Several existing key roadway operational improvements have been identified through previous planning efforts and included in the *TCTC Regional Transportation Plan (2016)* (RTP). These projects provide opportunities to add multi-modal mobility and safety in addition to other community benefits. Given the significant potential for multi-modal benefits, these roadway improvements have been incorporated into the suite of this study's recommendations to further provide a robust active transportation network.

Through this corridor planning process, the planned projects below have been updated to reflect additional multi-modal improvements and will need to be reflected in the RTP. Modified sections are identified in **Figure 15A – C** (pages 15-17).

Greenley Extension: The Greenley Extension is a proposed new collector road extension providing alternate access around downtown Sonora. The extension would connect the existing Greenley Road northern terminus at Lyon Bald Mountain Road heading north to where it will connect to SR49 near the Dossi Way/Columbia Road/SR 49 intersection. The purpose of the extension is to reduce congestion on SR 49 through downtown Sonora by providing through travelers an alternate route. Some of the benefits of the Greenley Extension include:

- ❖ Congestion reduction in downtown Sonora by an estimated 11-percent in 2040 (*State Route 108/49 Corridor Study, Caltrans 2019*)
- ❖ Alternate routes and improved capacity during natural disasters including catastrophic wildfires
- ❖ Improved emergency response times and better access to care facilities including Adventist Health Sonora, the area's largest healthcare facility located on existing Greenley Road
- ❖ Increased travel time reliability and reduced vehicle hours traveled

In addition to these benefits, the Greenley Extension improves the multi-modal network by providing the potential for additional bicycle and pedestrian facilities that link origins/destinations to the north of Sonora with commercial and medical destinations to the southeast of Sonora, as well as the regional transit center. The reduction in congestion in downtown also improves safety and comfort for bicyclists and pedestrians alike, especially given the very high pedestrian activity during peak tourist season. Furthermore, the Greenley Extension would also provide new connections for transit by improving reliability and potentially the frequency for riders, critical elements in maximizing ridership and reducing vehicular trips. Travel demand modeling identifies Greenley with a 2040 demand of 10,000 ADT, requiring a 2-lane facility and turn pockets in some locations. A conceptual

cross section is provided in **Figure 15C** (page 17) that includes proposed multi-modal facilities.

SR 49/SR108 Operational Improvements, Chicken Ranch Rd. to S. Main St.: The RTP identifies phased improvements of SR 49 leading up to Jamestown along SR 49. Phase 1 widens the roadway to accommodate a continuous center left-turn lane. Phase 2 expands on Phase 1 to add one travel lane in each direction along with complete street improvements. It is recommended this section be updated to include a shared use path on one side of the future roadway section in order to provide multi-modal connectivity between downtown Jamestown with commercial, residential, and education destinations to the south. The revised section is provided in **Figure 15A** (page15).

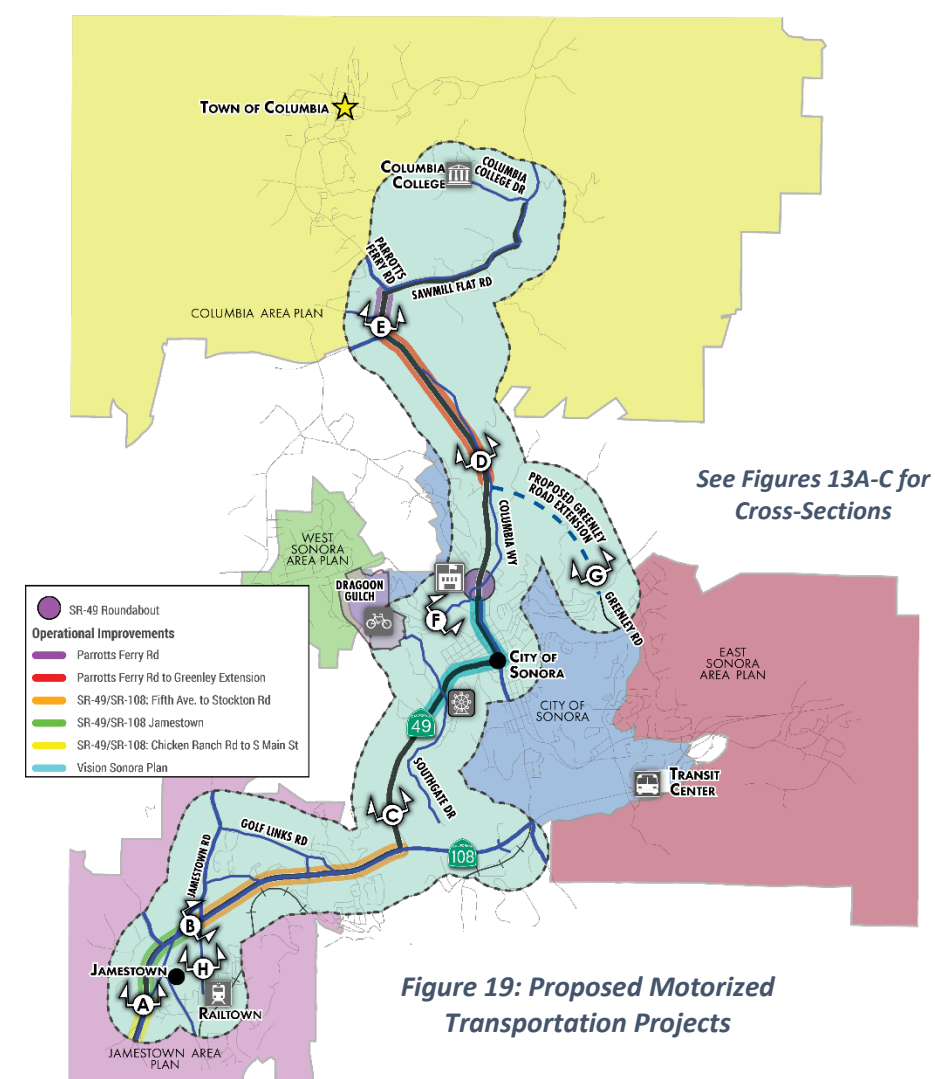


Figure 19: Proposed Motorized Transportation Projects

SR 49/SR108 Jamestown Operational Improvements, S. Main St. to Fifth Ave.: SR 49 through Jamestown, generally considered South Main Street to Fifth Avenue, is planned to be widened from the existing three-lane section to a five-lane section to address current and forecasted capacity issues. This expansion provides an excellent opportunity to incorporate bike lanes, and a shared use path on one side as well as pedestrian features, and transit stops into this busy segment in Jamestown. Given the existing right of way widths of 100-feet or more, there is ample opportunity to reasonably do so. The revised section is provided in **Figure 15A** (page 15).

SR 49/SR108 Operational Improvements, Fifth Ave. to Stockton Rd.: The RTP also identifies the need to extend the proposed five-lane section from Fifth Avenue to Stockton Road at the existing SR 49/SR 108 intersection. This widening would provide the opportunity to extend the complete streets improvements including the shared use path. The revised section is provided in **Figure 15A** (page 15).

SR 49 Operational Improvements, Parrotts Ferry Rd. to Greenley Rd. Extension: The RTP identifies widening SR 49 to five lanes from Parrotts Ferry Road to the proposed Greenley Road extension to accommodate anticipated traffic demands from the new roadway connection. This section of right of way is narrow with topographic constraints. Based on travel demand modeling, this segment of SR 49 would only require a 3-lane segment to accommodate future 2040 demands of around 17,000 ADT. It is recommended that the RTP be updated to reflect the 3-lane segment and accommodate a shared use path on one side. The revised section is provided in **Figure 15C** (page 17).

Parrotts Ferry Road Operational Improvements: The RTP also identifies widening Parrotts Ferry Road to five lanes for capacity improvements up to Sawmill Flat Road. This section of right of way is also narrow with topographic constraints. Based on travel demand modeling, this segment of SR 49 would only require a 3-lane segment to accommodate future 2040 demands of around 13,000 ADT. It is recommended that the RTP be updated to reflect the 3-lane segment and accommodate a shared use path on one side. The revised section is provided in **Figure 15C** (page 17).

SR 49/Shaws Flat Rd./Columbia Way/School St. Roundabout: North of downtown Sonora, SR 49 intersects with Shaws Flat Road, Columbia Way, and School Street in a five-leg, at grade intersection with stop control on each of the cross streets. Sonora High School lies just to the west of the intersection. Therefore, during school arrival and dismissal times, lunch time, and school events, there is a significant amount of pedestrian and vehicular traffic congestion at the intersection. This includes pedestrians crossing SR 49 via a crosswalk and overhead flasher at School Street.



The Vision Sonora (2013) plan identified a SR 49 North Gateway Corridor Project which included the concept of converting the stop-controlled intersection into a roundabout (Figure 20).



Figure 20: Existing and Proposed SR49/Shaws Flat Rd./Columbia Wy. Intersection

The roundabout conversion could significantly improve safety and comfort for pedestrians, cyclists, and vehicular travelers alike, particularly given the proximity to Sonora High School. As part of the *State Route 108/49 Corridor Study*, Caltrans has analyzed the potential performance of the roundabout using traffic microsimulation software. The initial results suggest the following potential benefits:

- Reductions in both existing and future (2040) VMT
- Reduced future delay and improved level of service
- Decreases in existing and future carbon dioxide and greenhouse gas emissions

Furthermore, a roundabout conversion is likely to reduce crashes at this location by approximately 30-percent and the potential for serious injury and fatality crashes by as much as 80-percent. This level of safety improvement combined with the other potential benefits listed suggest the roundabout conversion could be a very effective multi-modal strategy.

School Street: School Street has been identified as an area of concern as it provides access for buses, drop offs/pickups, school parking, and inadequate pedestrian facilities. It is recommended School Street be improved to accommodate safe routes to school with wider sidewalks and ADA improvements, as well as accommodating the shared use path on one side. A proposed cross section is provided in Figure 15B (Page 16).

Future Technology

Technology investments afford the opportunity to better manage the existing transportation system and improve performance through a wide variety of applications. The characteristics of the study area provide for several potential technology opportunities, many of which are centered around parking management given the large demand during peak tourist times and the resulting impact on congestion in the downtown areas.



With the installation of dynamic messages on SR 49, visitors to Sonora and Jamestown can get parking availability information in real-time, prior to arriving in town. By knowing ahead of time where parking availability exists, travelers can avoid circuitous driving in search of a space, reducing congestion in the downtown cores and the conflicts between vehicles and pedestrians.

Distinctive Communities Growth Scenario Guiding Principles

- Mixture of housing types near each other within the urban development boundaries
- Walkability and bicycling exists within the urban development boundaries
- Proposed shared use path connects the urban boundaries supporting many of the principles.
- Community boundaries are buffered by rural development promoting distinct communities
- Mixed-Use land uses will increase within the urban development boundaries
- Potential impacts to natural resources and agricultural land are preserved outside of defined communities
- Transportation choices, walking, bicycling, transit, passenger rail, and park-n-ride, increase but not to the extent of public services
- Proposed Improvements to transit services, new park-n-ride lots, shared use path, bike lanes, and sidewalk improvements all contribute to this principal.
- Greenhouse gas emissions are reduced greatly due to clustering within communities
- Proposed multi-modal improvements will provide non-motorized transportation choices to move between communities.
- Cost of development decreases due to clustered communities
- Provides sufficient land for all land use categories near each other within urban development boundaries

Air Quality and Greenhouse Gas Emissions

The *Tuolumne County 2016 Final Regional Transportation Plan* (RTP) prepared by TCTC includes a robust discussion on air quality and greenhouse gas emissions, which is included in Chapter 4 of that document titled “Rural Sustainable Strategies.” The RTP Rural Sustainable Strategies builds upon the *Tuolumne County Regional Blueprint Green House Gas Study* (2012). The RTP analyzed a series of growth scenarios, of which the Distinctive Communities Scenario was selected (Figure 21). Figure 21 also identifies strategies that are supported by the solutions of this SR 49 Multi-Modal Corridor Plan.

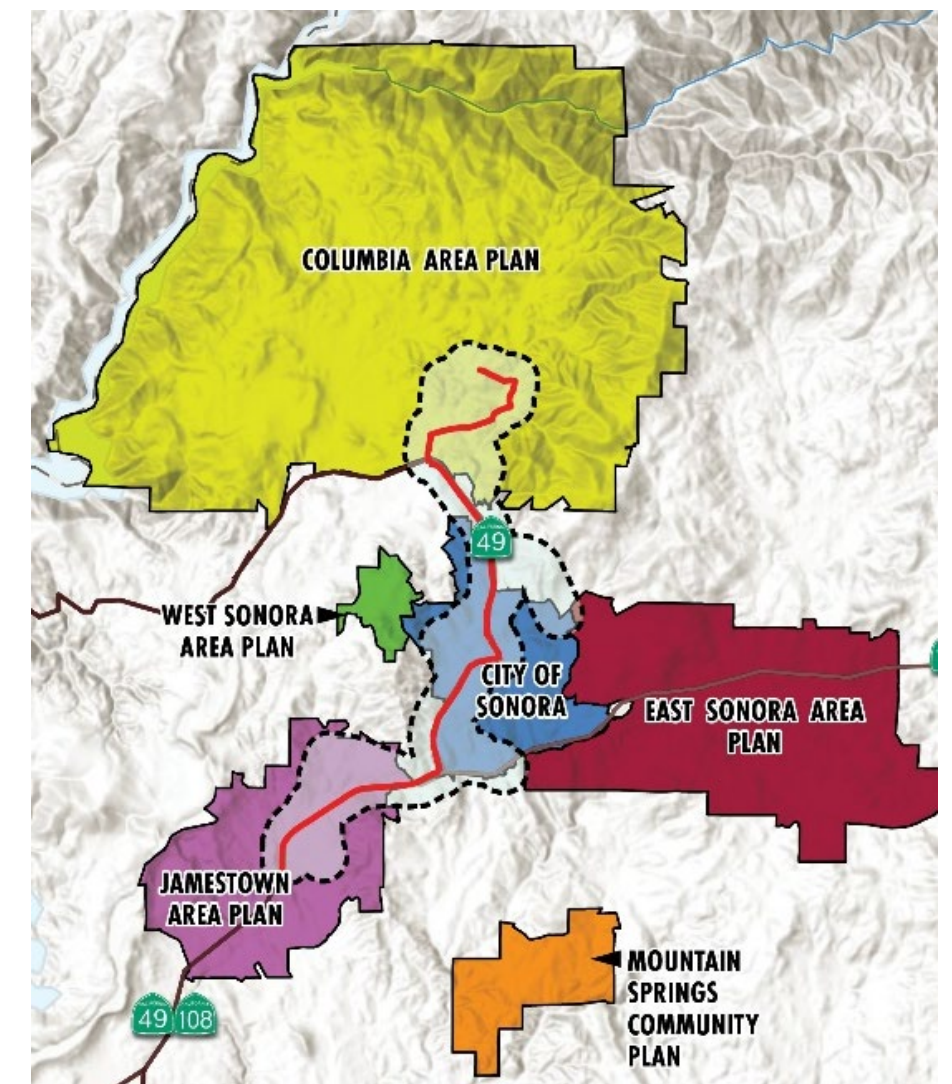
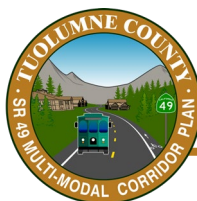


Figure 21: Tuolumne County Distinctive Community Boundaries within Project Area (RTP)



SR 49 CORRIDOR BUILD-OUT ANALYSIS

The SR 49 Multi-Modal Corridor Plan is a performance-based plan. As such, the benefits of proposed improvements have been estimated to establish performance benchmarks on a range of measures where feasible. Those metrics which cannot be quantified are analyzed qualitatively.

The current version of the Tuolumne County Regional Travel Demand Model (RTDM), recently updated as part of the Tuolumne County SB743 Vehicle Miles Traveled Study, was used to estimate performance metrics for the Class I facility (shared use path) preferred alternative. Analyses were performed with the Tuolumne County RTDM year 2040 scenario. The Preferred Class I facility was modeled based on the overall alignment shown in **Figure 16**. The Class II and III bicycle facility opportunities shown in **Figure 16** and the sidewalk opportunities shown in **Figure 17** were included as well with the understanding that these facilities will have minimal quantifiable benefits.

The current Tuolumne County RTDM has a full mode-choice component that takes total bicycle and pedestrian travel times and capacity into account when estimating total trips made by each mode in the County. The preferred alternative RTDM scenario was run, and results were extracted. Results were compared against data from a year 2040 No-Project Tuolumne County RTDM run. Results include total bicycle and pedestrian volumes and travel times along the Preferred Class I facility corridor and in the overall study area. Mode shift in the study area due to construction of the preferred alternative was also extracted. VMT and VHT were also extracted from roadways parallel to the preferred alternative to determine the preferred alternative’s effect on vehicle travel. The analysis results are shown in **Table 2** and illustrated in **Figure 22**.

Table 2: Buildout Analysis Results

Metric	No Project	Preferred Alternative
Total Corridor Bike Travel (miles)	291	558
Corridor Bike Travel Time NB/SB (minutes)	84/69	65/52
Total Corridor Walk Travel (miles)	15	19
Corridor Walk Travel Time NB/SB (minutes)	330/269	284/229
Corridor Route Transit Boardings	1,552	1,624
Total VMT on Corridor	151,207	149,199
Total VHT on Corridor	4,095	4,016

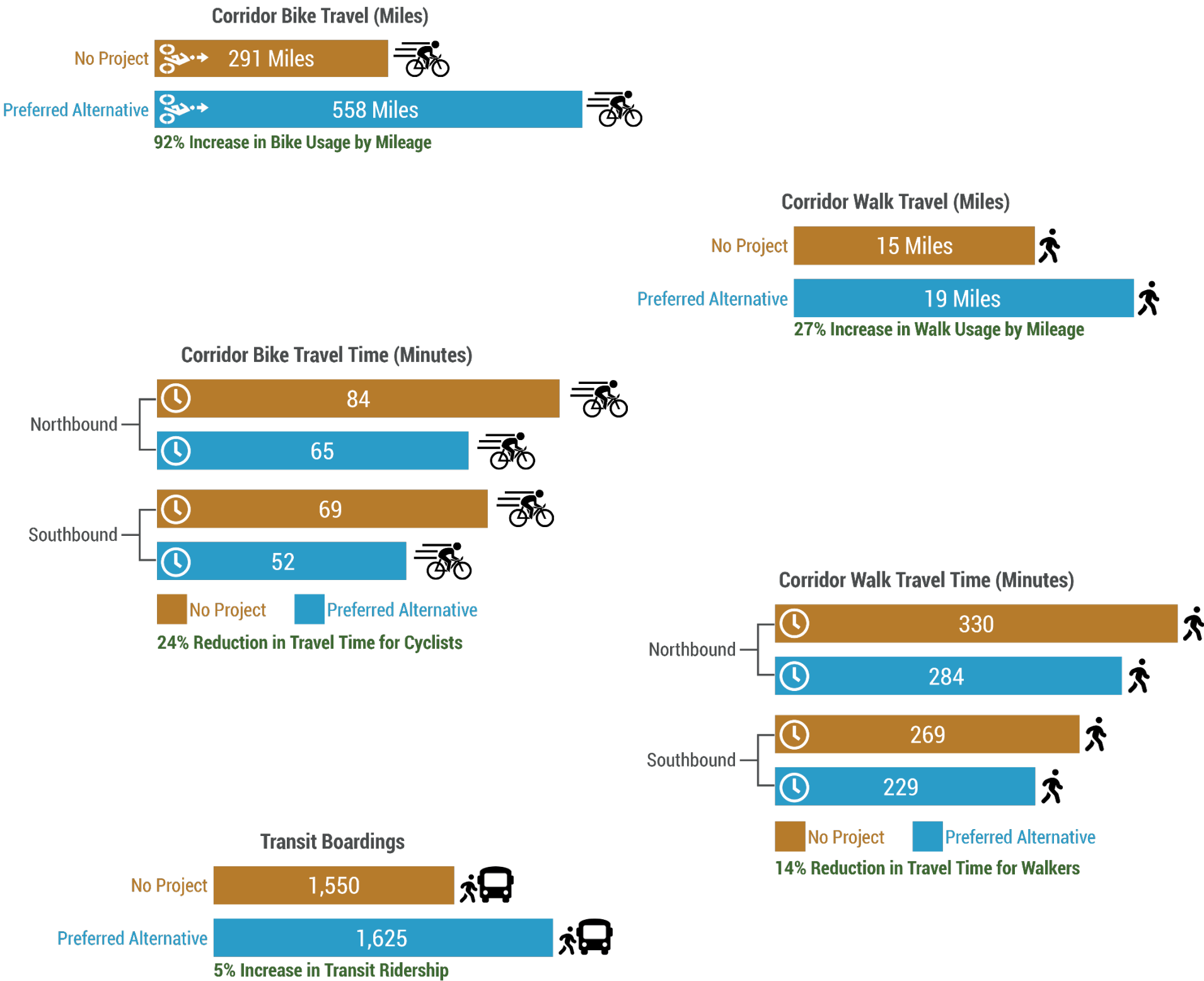
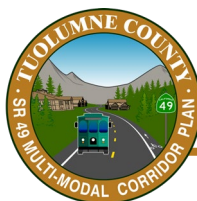


Figure 22: Buildout Analysis Results



PROJECT EVALUATION

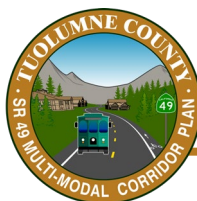
The SR 49 Multi-modal Corridor Plan has been developed to meet a broad range of goals, objectives and performance measures. The following table identifies how the corridor plan will help achieve those performance measures identified by the Regional Transportation Plan and the Congested

Corridor Plan Program. As described above and further illustrated in **Figure 23**, the SR 49 Multi-Modal Corridor Plan is the link between the Tuolumne County General Plan and the Distinctive Communities Land Use scenario and the broader goals of SB1 and SB743 and their associated performance targets.








SB1 Congested Corridor Plan Performance Measures	SB1 Congested Corridor Plan Supported Objectives	Relevant RTP Goals Supported	SR 49 Corridor Plan Supported Objectives	SR 49 Corridor Plan Performance Measures	SR 49 Corridor Plan Performance Results
Congestion and Delay (Multi-Modal Approach)	<ul style="list-style-type: none">Reduce person hours of delayIncrease person throughput by modeReduce vehicle miles traveled (VMT)	<ul style="list-style-type: none">Environmental stewardshipLand use and transportationExpand the multi-modal system	<ul style="list-style-type: none">Reduce traffic congestion, reduce GHG's, and reduce VMT	<ul style="list-style-type: none">Person hours of delayThroughput by modeVMT reduction	<ul style="list-style-type: none">Person hours of delay 24% Travel Time Reduction for Cyclists 14% Travel Time Reduction for PedestriansThroughput by Mode 91% Increase in Bike Mileage 27% Increase in Pedestrian MileageVMT Reduction 2,000 VMT Reduced
Safety	<ul style="list-style-type: none">Reduction of injuries and fatalitiesElements that support enhancement of public safety	<ul style="list-style-type: none">Safety	<ul style="list-style-type: none">Improve pedestrian, bicycle, automobile, and transit safety	<ul style="list-style-type: none">Number of serious injuriesNumber of fatalities	<ul style="list-style-type: none">Number of serious injuries and fatalities 25% reduction in vehicle/bicycle crashes for paths adjacent to the roadway 99% reduction in vehicle/bicycle and pedestrian crashes for barrier-separated paths 78% reduction in multi-modal crashes where sidewalk currently does not exist
Accessibility	<ul style="list-style-type: none">Access to multi-modal choicesGaps in transitConnecting jobs, major destinations and residential areasReliability of the systemComplete streetsCreating network for non-vehicle facilities	<ul style="list-style-type: none">Expand the multi-modal system	<ul style="list-style-type: none">Implement complete streetsEliminate large gaps in the pedestrian and bicycle networkAccommodate transit stops and transit access along SR 49	<ul style="list-style-type: none">Miles of new multi-modal infrastructureNumber of new bus stops	<ul style="list-style-type: none">Miles of new multi-modal infrastructure 4.7 miles of new shared use path 5.6 miles of new sidewalks 1.6 miles of class II bike facilitiesNumber of new bus stops 5 new bus stops
Economic Development, Job Creation and Retention	<ul style="list-style-type: none">Job accessDisadvantaged communitiesFreight and movement of goods	<ul style="list-style-type: none">EconomyQuality of Life – Social Equity	<ul style="list-style-type: none">Increase access and transportation choice for disadvantaged communities	<ul style="list-style-type: none">Number of disadvantaged residents within ½ mile of proposed multi-modal infrastructure	<ul style="list-style-type: none">Disadvantaged residents 9,685 residents within ½ mile of proposed multi-modal infrastructure
Air Quality and Green House Gases	<ul style="list-style-type: none">Reducing green house gases	<ul style="list-style-type: none">Environmental stewardshipLand use and transportationExpand the multi-modal system	<ul style="list-style-type: none">Reduce traffic congestion, reduce GHGs, and reduce VMT	<ul style="list-style-type: none">Green house gas reduction	<ul style="list-style-type: none">GHG reduction Overall reduction of 1.35 Million Tons of CO₂ as a result of connecting the distinctive communities strategy and new multi-modal options
Efficient Land Use	<ul style="list-style-type: none">Mixed development with multi-modal choicesSupport in-fill developmentCorridor access management policiesAddresses climate adaptionAffordable housingConserve land and natural resources	<ul style="list-style-type: none">Land use and transportation(distinctive communities growth scenario)	<ul style="list-style-type: none">Comply with Senate Bill 1 (SB1)	<ul style="list-style-type: none">Miles of new multi-modal infrastructure located in or within ½ mile of defined community boundaries	<ul style="list-style-type: none">Miles of new multi-modal infrastructure 12.4 miles of new multi-modal infrastructure within ½ mile of defined community boundaries

Figure 23: Project Evaluation



IMPLEMENTATION PLAN

To successfully implement the SR 49 Multi-Modal Corridor Plan, TCTC and other regional partner agencies will need to collaborate and work together to fund priority projects and continue to move longer-term projects forward. Regional collaboration includes regional support for funding, right of way acquisition, collaborating during the environmental and design phases, and combining multiple project elements to leverage resources. Regional support of these projects will help the public understand their benefits and the roles they play in improving the overall corridor for the greater good of the community.

-  Implement Shared Use Path
-  Leverage Major Highway Projects to include multi-modal improvements
-  Support Transit; decrease headways, expand the Adventure Trolley, and construct park and ride lots
-  Secure right of way for key projects
-  Leverage local and state funding, apply for and support grant funding

There are key projects within the corridor already underway, primarily those identified in the Vision Sonora Plan, and key highway projects identified through the RTP that can incorporate needed multi-modal infrastructure. The majority of the improvements identified in the Plan build on these existing projects and will require updates to the RTP.

As the corridor does not currently have bike facilities, a priority segment has been selected as a demonstration project to highlight the benefits a well-connected shared use path can provide for the community.



Priority Class I Segment: Dragoon Gulch Connector

This priority Class I segment (**Figure 23**) offers connectivity between the fairgrounds, Woods Creek Park, large residential areas including the Seventh Day Adventist community, and the high school. Furthermore, the alternative connection point between the southern and northern ends of Sonora that avoids downtown congestion.

Priority Segment Opportunities

Formalizes a dirt path that is already being used by pedestrians, provides a safe route to school, and adds a new multimodal connection between the surrounding neighborhoods and community park, trail network (Dragoon Gulch), and fairgrounds.

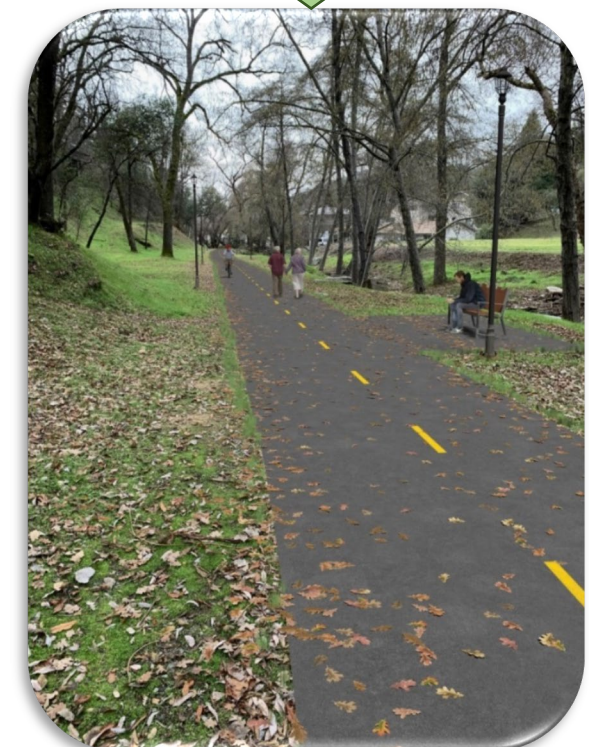
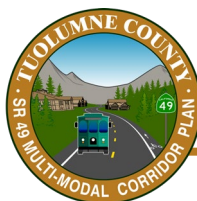


Figure 24: Priority Class I Segment Map & Rendering



SR 49 Multi-Modal Corridor Plan

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Project Prioritization

The solutions and projects identified as part of the Plan will take time to implement given financial constraints and project development requirements. Therefore, a project prioritization scheme has been developed to phase efforts over a short, mid and long-term implementation horizon. **Figure 25** illustrates the project prioritization and implementation plan. This plan can be used to inform planning, capital improvement programming and other development efforts in the corridor.

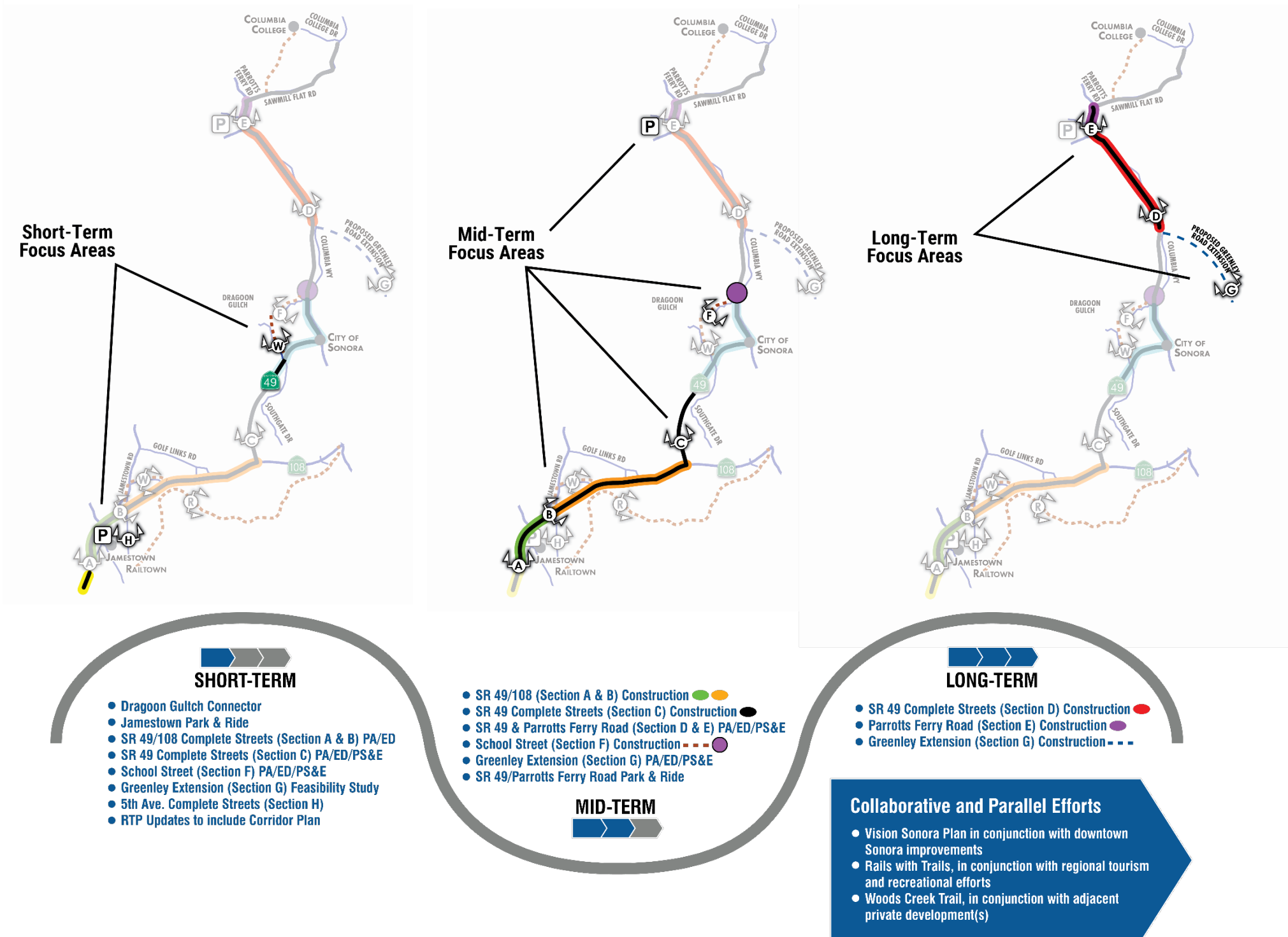


Figure 25: Prioritization Phasing

Other project elements that should be considered during implementation:



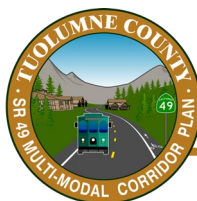
Creating Competitive Corridor Projects

The immediate focus for implementation is moving the congested corridor projects and solutions forward through updating the RTP, completing feasibility studies, and moving key projects through the environmental process. Ongoing coordination with Caltrans should be a high priority in order to transform the Caltrans widening projects to incorporate the multi-modal solutions proposed within this corridor plan. This not only reduces the time for implementation, it creates the ideal projects for the Congested Corridor program while providing multiple community benefits.

As projects move through the feasibility and project approval/environment document (PA/ED) phases, grant funding applications become more competitive. Combining projects at the corridor level may create high dollar projects, but ultimately provide cost benefits and allow the corridor project to be eligible for multiple funding sources.



Appendix A



One-On-One Meetings

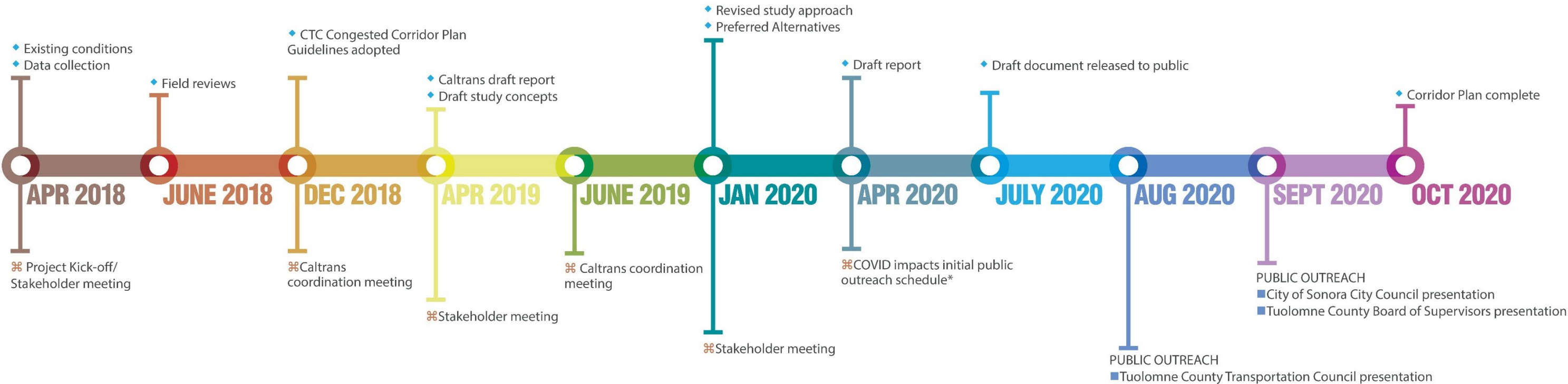
- City of Sonora
- Caltrans
- Union Hill Inn
- Sonora Union High School District
- Columbia College
- Seventh-day Adventists
- California Transportation Commission

Stakeholder Meetings Participants

- Sonora Union High School District
- Columbia College
- City of Sonora
- Tuolumne County Public Works
- Jamestown
- Caltrans
- California State Parks

Public Meetings & Presentations

- Tuolumne County Transportation/Citizen Advisory Council (8/5)
- Tuolumne County Transportation Council Presentation (8/5)
- Tuolumne County Board of Supervisors Presentation (9/15)
- City of Sonora City Council Presentation (9/21)





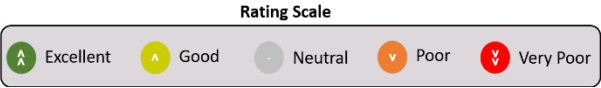
Appendix B



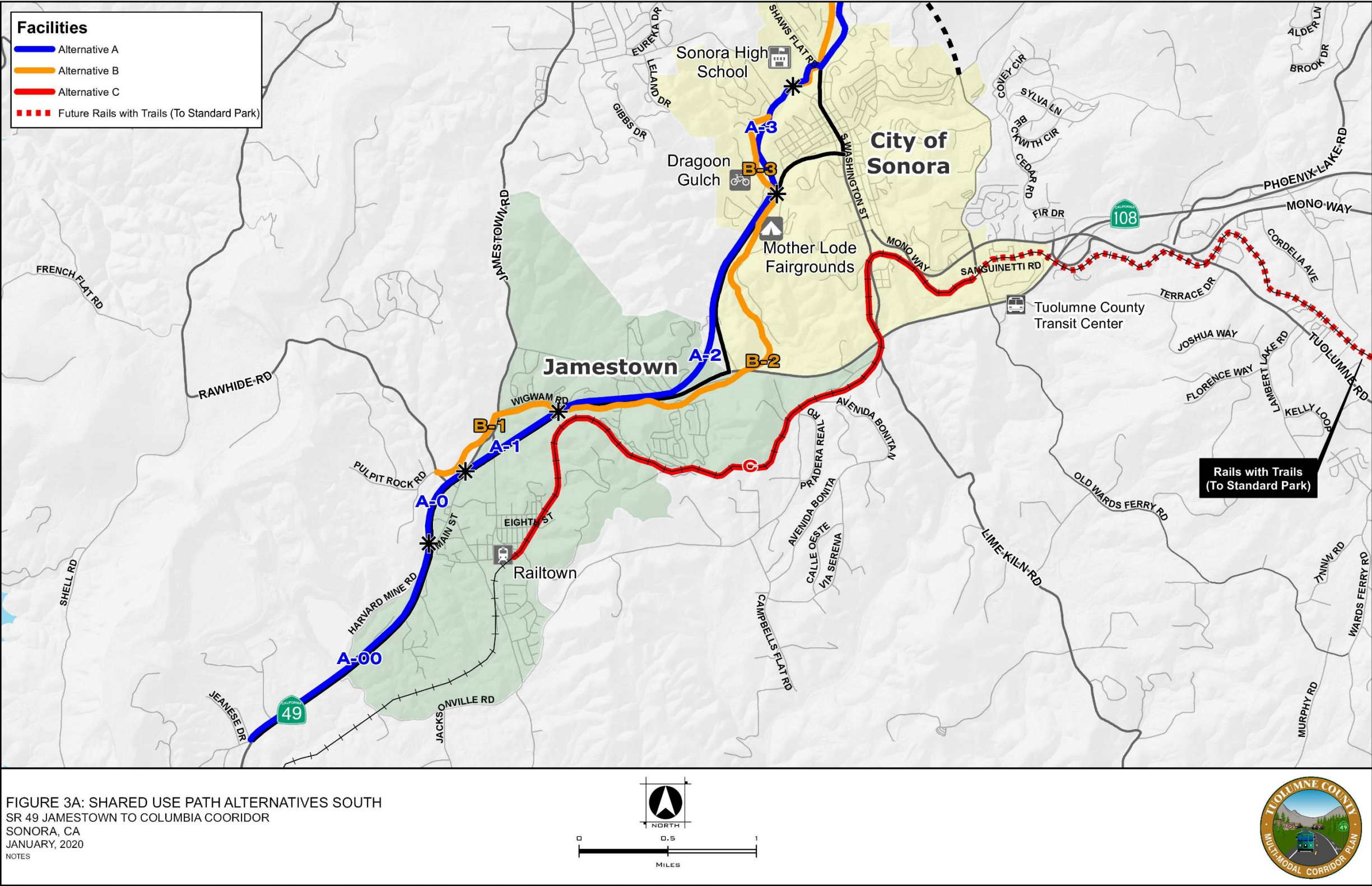
SR 49 Multi-Modal Corridor Plan

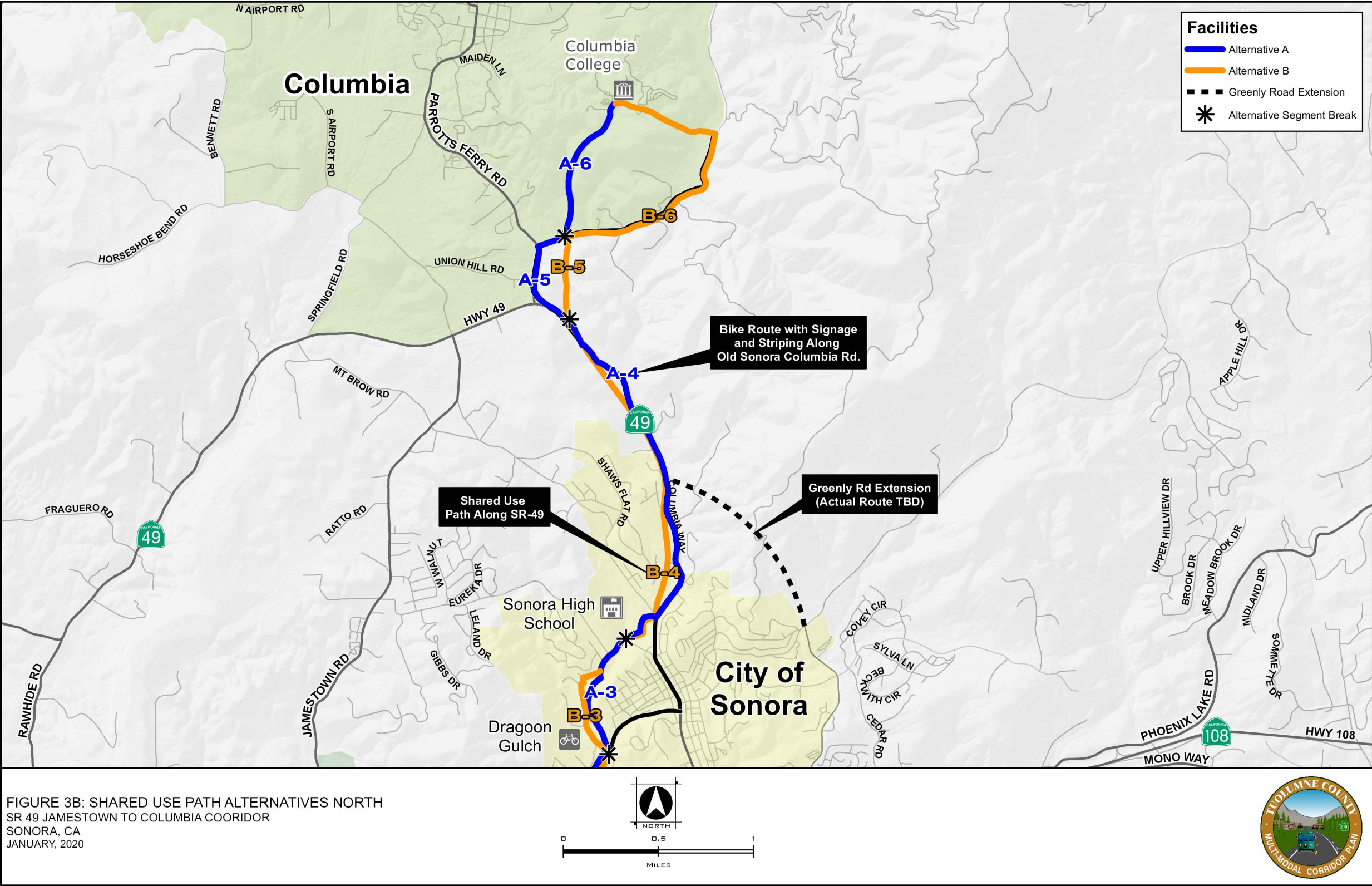
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	Alternative A						Alternative B						Alt C
Evaluation Criteria	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	C
User Experience	▲	▲	▲	▲	▲	●	▲	▼	▲	▲	●	●	●
Connectivity	▲	▲	▲	▲	▲	▲	▲	▼	▲	▲	▲	▲	▲
Environmental Impacts	▲	●	▲	▲	●	●	●	▼	▲	▲	▼	▼	▼
Constructability	▲	▼	▲	▲	▲	▲	●	▼	●	●	▼	▼	▼
Cost	\$	\$\$\$	\$	<\$	\$	\$\$	\$\$	\$\$\$	\$\$	\$\$	\$\$\$	\$\$\$	\$\$\$
	Recommended Preferred Alternative												

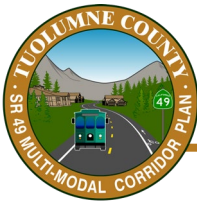


Evaluation Criteria	Shared Use Path Alignment Matrix												
	Alternative A						Alternative B						Alternative C
	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	C
	Jamestown to Sonora			Sonora to Columbia College			Jamestown to Sonora			Sonora to Columbia College			Jamestown to Sonora
User Experience (Safety, User Comfort, Accessibility)	4	4	5	4	4	3	4	2	4	4	3	3	3
Shared use path alignment provides sufficient separation from the highway, is visible to public areas, provides grades 5% or less, and has the greatest potential to attract users	Opportunities: Direct route, path along transportation route, grades less than 5%, visible from SR 49, path does not cross SR 49.			Opportunities: Direct route, path along transportation corridor, visible from SR 49			Opportunities: Follows creek for better user experience, connection points to neighborhoods on north and south of SR 49.			Opportunities: Shared use path along main roadway to Parrots Ferry Road.			Rails with Trails Standards for safety and separation, good visibility, flat grades, little railroad usage
	Constraints: Could require ped crossings on SR 49 to access path from south. Comfort concerns with users adjacent to vehicles			Constraints: Some users may not be comfortable on Old Sonora Columbia Road intermixed with cars.			Constraints: Grades greater than 5%, less visible in certain areas, some sections completely out of sight, crosses SR 49			Constraints: Segment B5 has steep slopes, Segment B6 would have multiple driveway and street crossings within limited right of way.			
Connectivity	5	5	5	5	5	4	5	2	5	5	4	5	4
Shared use path alignment has direct connections between residential areas and commercial and civic centers	Opportunities: Direct connectivity along SR 49, provides better connectivity to more commercial areas than Alt B.			Opportunities: Direct connectivity along SR 49 between Sonora and Columbia College.			Opportunities: Provides better connectivity to multiple residential areas compared to A.			Opportunities: Shared use path along SR 49 from Sonora to Parrots Ferry Rd. Provides shared use path along Sawmill Flat Rd.			Provides a great opportunity to connect Jamestown to East Sonora. Does not support Columbia College connectivity.
	Constraints: Not directly connected to all residential areas.			Constraints: Utilizes Old Sonora Columbia Rd, which does not connect to residential areas along the west side of SR 49			Constraints: Not as well connected to commercial areas as A.			Constraints: Connects through private property used for special events (weddings), which could create conflicts.			
Minimal Environmental Impacts	4	3	5	4	3	3	3	2	4	4	2	2	2
Shared use path alignment takes advantage of existing transportation right of way, existing dirt trails or is located in areas that would limit impacts to the surrounding environment.	Opportunities: Minimal environmental impact. Would fit within existing highway corridor and existing transportation right of way. Adds path where people already walk and ride.			Opportunities: Segment A4 only requires signage and striping to make Old Sonora Columbia Rd a bike route. A5 would follow existing highway right of way. A6 follows existing informal dirt trails.			Opportunities: Provides a paved connection along the creek where people already are, and would improve user created trails.			Opportunities: Segment B4 follows existing transportation right of way.			Existing railroad corridor, potential environmental impacts due to the need for additional right of way in some locations.
	Constraints: A few sections would require cutting into steep hillsides.			Constraints: The Old Sonora Columbia Road (A4) is narrow, may be some concern by residents of this being an official bike route on the map. A6 has segments that would impact undisturbed land.			Constraints: Building a paved path along the natural creek would have a bigger potential for environmental impacts compared to A. Would require significant grading in many areas.			Constraints: Segments B5 and B6 cross undisturbed private land.			
Constructability	4	2	5	4	4	4	3	2	3	3	2	1	2
Shared use path alignment is located in areas with minimal slope, would not require substantial walls or bridge crossings, and takes advantage of existing public right of way.	Opportunities: Several sections of the path could be included with already planned road widening projects. There is existing transportation right of way for most areas.			Opportunities: Segment A4 only requires signage and striping to make Old Sonora Columbia Rd a bike route. A5 would follow existing highway right of way.			Opportunities: Would not require cutting steep slopes along the highway.			Opportunities: Many sections of B4 can accommodate a shared use path within the highway right of way.			Design standards for Rails with Trails, sufficient right of way for most segments but will require additional right of way in narrow sections and where second tracks may exist, will require walls in narrow sections south of Washington St.
	Constraints: Will require walls and cutting through steep slopes in select segments.			Constraints: Sections of right of way for A5 are narrow and include powerlines. A6 will require substantial grading and the potential for walls.			Constraints: Will require substantial grading, walls, and either tunnel under the highway or at-grade crossing. Path follows challenging terrain for several segments.			Constraints: Portions of B4 will require cutting steep slopes, will need walls for portions or shifting the highway to accommodate the path. B5 will require substantial grading on steeper slopes. B6 will require cutting steep slopes, adding walls, and crossing multiple driveways.			
Total Points	17	14	20	17	16	14	15	8	16	16	11	11	11
Cost	\$	\$\$\$	\$	<\$	\$	\$\$	\$\$	\$\$\$	\$\$	\$\$	\$\$\$	\$\$\$	\$\$\$
Cost is based on a planning-level per mile costs: <\$ = Less than \$500K, \$ - \$1M to \$2M, \$\$ - \$2M to \$4M, \$\$\$ - \$4M to \$6M	Alternative A Costs: Less complicated segments, would most likely fall within existing SR 49 right of way, and could leverage funding from adjacent highway projects.			Alternative A Costs: Less complicated segments, take advantage of rural roads as a bike route for some segments, and utilizes existing right of way for the majority of the segments.			Alternative B Costs: Segments are more expensive than or equal to Alternative A segments, would require easements or property acquisitions for many of the segments, is separated from the highway creating a more difficult construction and less opportunity to leverage funding used for SR 49.			Alternative B Costs: Segments are more difficult to construct than Alternative A segments, much more expensive to construct, and would require property acquisition for many of the segments. The B4 segment could be less expensive if done concurrently in the long term with a future SR 49 improvement project by shifting the highway to accommodate the shared use path in some sections.			Takes advantage of existing railroad grades and right of way. Does not provide direct connectivity to many study area origins/destinations.
Evaluation scale: 1 - Alternative does not meet the criteria 2 - Alternative minimally meets the criteria 3 - Alternative partially meets the criteria 4 - Alternative mostly meets the criteria 5 - Alternative fully meets the criteria	Preferred Alternative Recommendation: A1, A2, A3/B3, A4 (Short Term), B4 (Long Term), A5, and A6 have the most potential to move forward from a constructability and cost standpoint. These segments also provide great connectivity, leverage existing right of way and future highway projects for faster implementation. Adding portions of B1 and B2 connecting back to the A alignment would provide a benefit to connecting the residential areas to the A alignment, improving overall connectivity between residential and commercial nodes. The C alignment should be considered as a standalone project to connect Jamestown to East Sonora and potentially Shadow Park.												





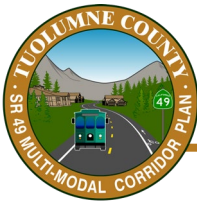
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SR 49 Multi-Modal Corridor Plan

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[Reserved for Plan & Profile sheets for Alignments]

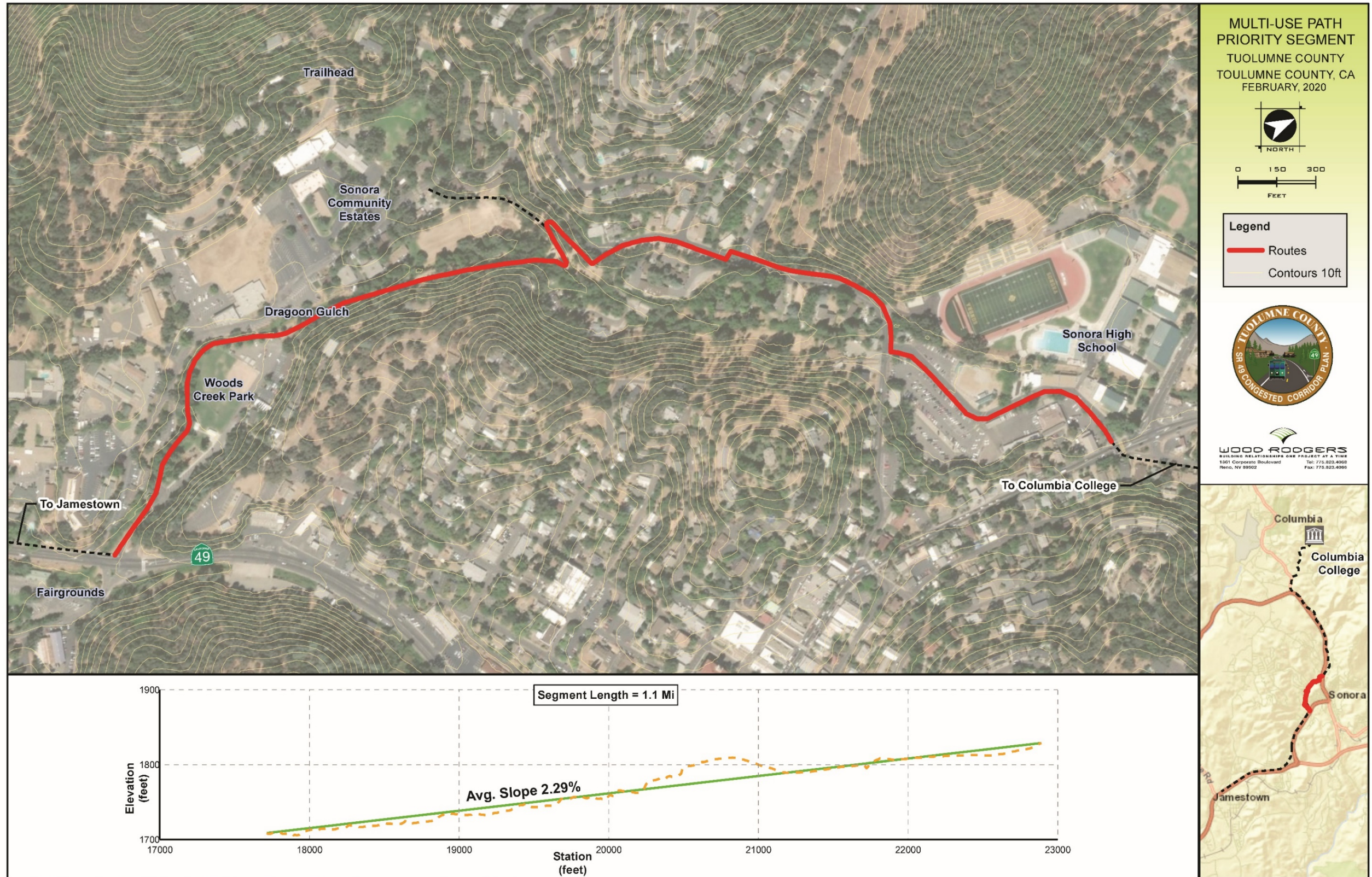


Appendix C

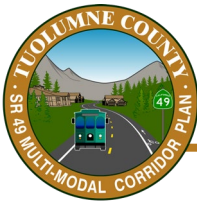


SR 49 Multi-Modal Corridor Plan

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Appendix D



SR 49 Multi-Modal Corridor Plan

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Project	Phase	Conceptual Cost Range	Potential Funding Sources
Short Term			
Dragoon Gulch Connector Trail	PA&ED, PS&E, Construction	\$2,500,000 - \$3,500,000	ATP
Jamestown Park & Ride	PA&ED, PS&E, Construction	\$500,000 - \$1,000,000	ATP, FTA, CMAQ
5th Ave. Complete Streets (Section H)	PA&ED, PS&E, Construction	\$3,100,000 - \$4,200,000	ATP, FTA, CMAQ
SR 49/108 Complete Streets (Section A&B)	PA&ED, PS&E	\$3,000,000 - \$4,500,000	Congested Corridors, SHOPP, STIP, HSIP, CMAQ, ATP, Goods Movement
School Street (Section F, includes SR 49 Roundabout)	PA&ED, PS&E	\$1,600,000 - \$2,200,000	
SR 49 Complete Streets (Section C)	PA&ED	\$2,000,000 - \$2,800,000	
Greenley Extension (Section G)	Feasibility Study	\$400,000 - \$500,000	
RTP Update to include Corridor Plan	Planning		
Mid Term			
SR49/Parrots Ferry Road Park & Ride	PA&ED, PS&E, Construction	\$500,000 - \$1,000,000	ATP, FTA, CMAQ
SR49/108 Complete Streets (Section A&B)	Construction	\$10,000,000 - \$14,000,000	Congested Corridors, SHOPP, STIP, HSIP, CMAQ, ATP, Goods Movement
School Street (Section F, includes SR 49 Roundabout)	Construction	\$4,500,000 - \$6,000,000	
SR49 Complete Streets (Section C)	PS&E, Construction	\$20,000,000 - \$25,000,000	
Greenley Extension (Section G)	PA&ED, PS&E	\$2,900,000 - \$4,300,000	
SR 49 & Parrotts Ferry Road Complete Streets (Section D&E)	PA&ED, PS&E	\$3,400,000 - \$4,500,000	
Long Term			
Greenley Extension (Section G)	Construction	\$7,200,000 - \$10,800,000	Congested Corridors, SHOPP, STIP, HSIP, CMAQ, ATP, Goods Movement
SR 49 Complete Streets (Section D)	Construction	\$6,900,000 - \$9,600,000	
Parrots Ferry Road Complete Streets (Section E)	Construction	\$1,000,000 - \$1,500,000	