

# OLANCHA CARTAGO



CORRIDOR STUDY 2020

Inyo County Planning Department

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# ACKNOWLEDGMENTS

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## **In Association with LSC Transportation Consultants**



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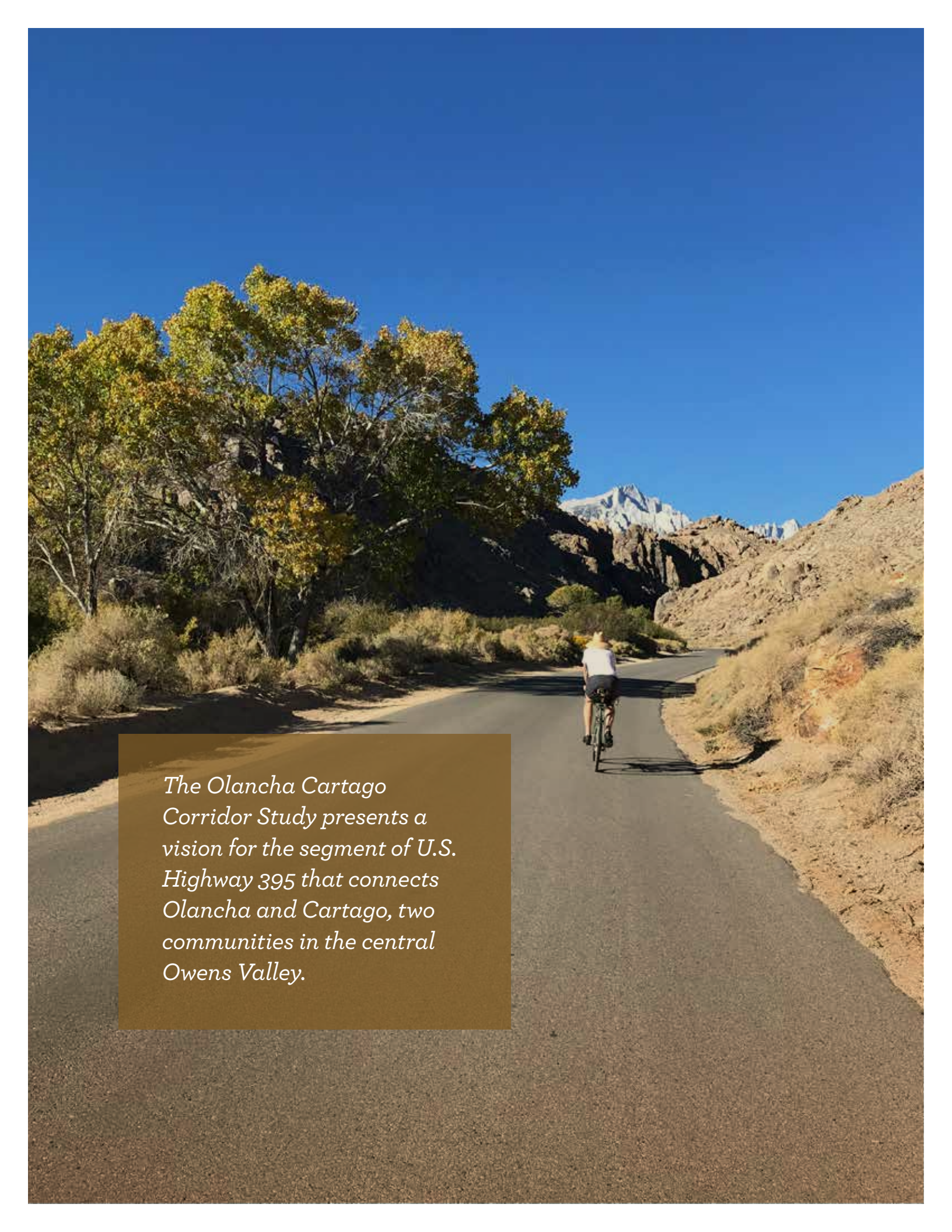
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# EXECUTIVE SUMMARY





A person wearing a white shirt and dark shorts is riding a bicycle away from the camera on a paved road. The road is flanked by dry, yellowish-brown vegetation and trees with some autumn-colored leaves. In the background, there are rugged, rocky mountains under a clear blue sky. The scene is set in a valley.

*The Olancha Cartago Corridor Study presents a vision for the segment of U.S. Highway 395 that connects Olancha and Cartago, two communities in the central Owens Valley.*

## VISION + GOALS

U.S. 395 is being realigned in this area, changing the function of the existing road from a high-speed highway to a corridor built for human-scale activities like walking, bicycling, and community gathering. This study provides a blueprint for the transformation that meets community needs, strengthens local economic development, and honors the history, culture, and landscape of the area.

With guidance from these goals, this study delivers design concepts and strategies that outline how Inyo County can reinvent the area once the realignment is complete, creating a corridor that serves and celebrates the communities who live there today and draws visitors in to experience the vast recreational opportunities the area has to offer.

*The study is driven by the following community-identified goals:*



**IMPROVE TRAFFIC SAFETY**



**MAINTAIN/INCREASE VISITORS TO THE AREA**



**DETERMINE APPROPRIATE SPEEDS THROUGH THE CORRIDOR**



**CRAFT STRATEGIES TO BRAND THE CORRIDOR AS A DESTINATION**



**EXPAND ACTIVE TRANSPORTATION OPTIONS**



**PROMOTE ECONOMIC STABILITY AND GROWTH**



**CREATE CONNECTIONS TO NEARBY RECREATIONAL ASSETS**



## CONTEXT

In the Eastern Sierra, between the “extremes” of the Sierra Nevada Mountains and the Inyo and White Mountains, U.S. Highway 395 runs north to south through Inyo County. Olancha and Cartago are two communities along Highway 395, just south of Owens Lake.

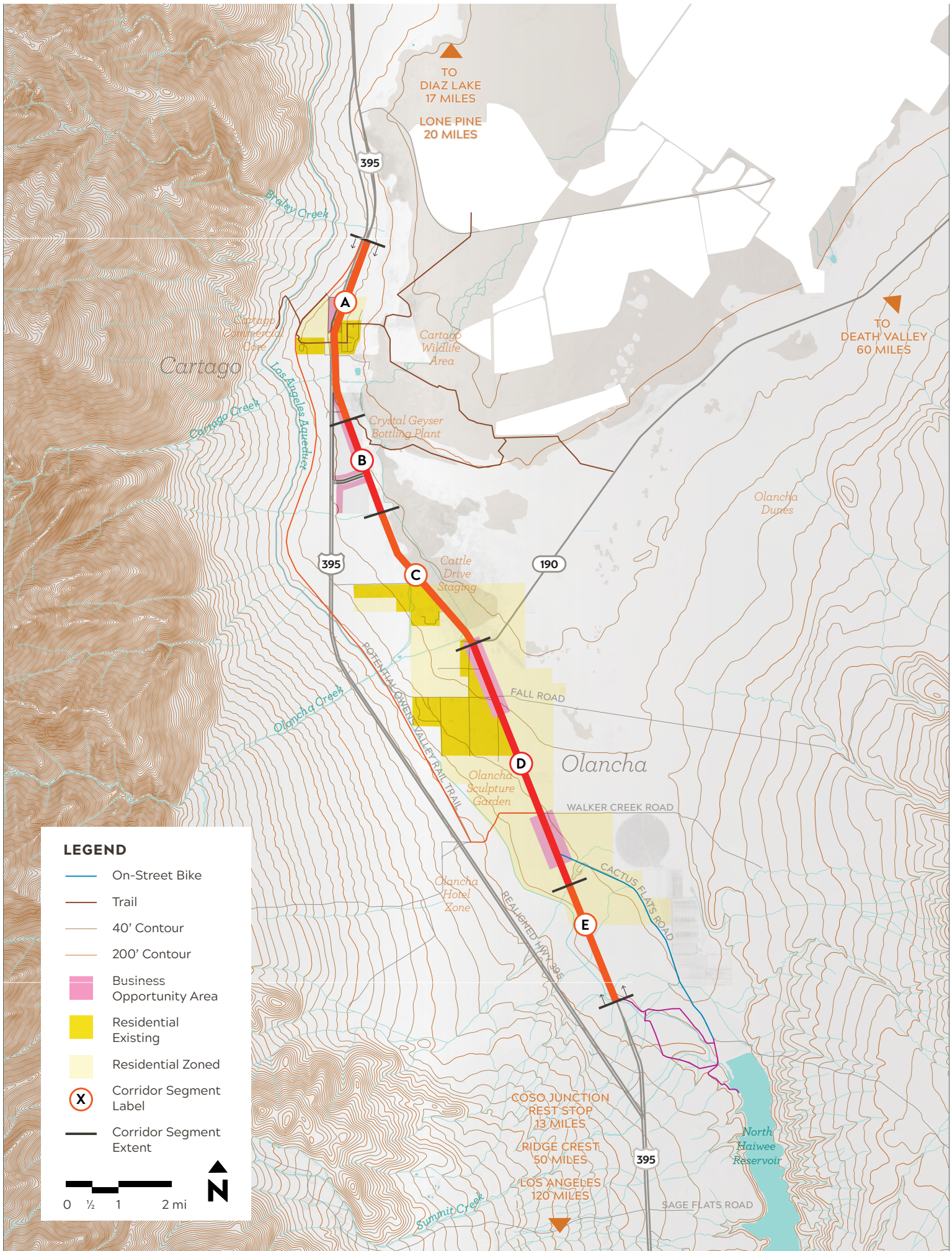
The realignment and expansion of U.S. Highway 395, known as the Olancha/Cartago 4-Lane Project, will replace 12.6 miles of two-lane highway, creating a new four-lane divided expressway west of the present-day U.S. 395. The main purpose of the realignment and expansion is to meet present and future vehicular and goods movement traffic demands and bring Highway 395 up to current design standards.

The Olancha Cartago Corridor Study area is a two-lane segment of U.S. 395 that connects the towns of Olancha and Cartago. With the realignment, this segment will become a county road north of Route 190, while the southern portion will become 190-South.

In 2017, Inyo County was awarded a SB-1 Sustainable Communities Grant to analyze this section of U.S. 395 and study what could become of the corridor after the realignment. This document presents the findings and recommendations of this grant-funded study.

*Above: Conceptual rendering of a bird blind and interpretive signage along walking trail.*





**LEGEND**

- On-Street Bike
- Trail
- 40' Contour
- 200' Contour
- Business Opportunity Area
- Residential Existing
- Residential Zoned
- X Corridor Segment Label
- Corridor Segment Extent



## PLANNING PROCESS

The Olancha Cartago Corridor Study builds upon previous state and local planning efforts to improve circulation and active transportation options in the area. The study involved a comprehensive review of existing land use, zoning, and roadway conditions to identify opportunities and constraints along the corridor. These findings were brought to the community through an extensive engagement process between November 2018 and August 2019.

*Community feedback on vision, goals, and priority improvements was used to inform the development of a concept plan and recommendations for the corridor.*

The key themes that emerged from the engagement process were a desire to brand the corridor as a destination and attract visitors to the area, celebrate the local history and landscape, improve connectivity to recreational resources, and strengthen local economic development. These themes are present throughout the concept plan and recommendations for the corridor.

*Right: Open house event at the Ranch House Café in Olancha, CA, November 2018.*





*Above: Conceptual rendering of pedestrian crosswalks and new monument sign for Death Valley at 190 Junction.*

## DESIGN TOOLKIT

A design toolkit was developed to present a collection of treatments and strategies that could be applied to the corridor to meet the community's goals for the study. Toolkit elements are grouped into three broad categories: Runs, Riffles, and Pools.

Specific toolkit elements include bicycle, pedestrian, and equestrian improvements to strengthen active transportation options, branded gateway, wayfinding, and public

art elements to attract visitors to the area, and programming and policy initiatives such as zoning changes and temporary programming to spur local economic development.

A combination of the elements in the toolkit were used to develop a concept plan and list of priority projects for the corridor.



### RUNS

Active transportation, safety, and wayfinding elements



### RIFFLES

Active areas, amenities, and temporary programming



### POOLS

Moments of pause and placemaking

# DESIGN TOOLKIT



## RUNS

### PEDESTRIAN IMPROVEMENTS



<b>Paved Side Path</b>	A paved side path adjacent to the roadway along the corridor designed for pedestrian use explicitly
<b>Crosswalk with RRFB signal</b>	Rectangular Rapid Flash Beacons (RRFB's) are used to increase the visibility of pedestrian crosswalks, particularly at unsignalized intersections like those along Fall Rd, Hwy 190, and Lake St.
<b>Shared-use side path</b>	A paved side path adjacent to the roadway that is designed for shared use between people walking and people on bicycles
<b>DG Side Path</b>	An unpaved side path with fencing adjacent to the roadway designated for shared pedestrian and equestrian use

### BICYCLE IMPROVEMENTS



<b>Class II Bike Lane</b>	A Class II bike lane is an on-street designated bike facility utilizing striping and stencils. Class II Bike Lanes are most effective on streets with a speed limit under 35mph and is recommended along the corridor south of the 190 junction
<b>Class IV Bike Lane</b>	A Class IV (on-street, separated) bikeway includes some type of vertical element separating vehicle and bicycle traffic. This physical separation adds a level of comfort and safety for people riding bikes
<b>Class I Bike Path</b>	A Class I bikeway is an off-street dedicated bike facility entirely separated from vehicular traffic which is recommended north of the 190 junction (shared-use path)

### EQUESTRIAN IMPROVEMENTS



<b>Shared-use side path</b>	A paved side path adjacent to the roadway that is designed for shared use between people walking and people on bicycles
<b>Equestrian Trails (through neighborhood)</b>	Equestrian trails through neighborhoods will allow for horse-riders to use adjacent roads and areas to connect an equestrian-use network throughout the corridor. The re-alignment may allow for additional crossings and equestrian access that did not exist before
<b>Equestrian Trail</b>	An equestrian trail is recommended south of the northern gateway through the corridor that is designed minimally without grading or clearing and using the native materials

**EQUESTRIAN IMPROVEMENTS**



**Enhanced Equestrian Trail**

An enhanced equestrian trail would be made of decomposed granite or other materials, graded and cleared to allow for riding two abreast

**Equestrian Amenities**

Equestrian amenities include troughs, hitching posts, tie-offs, and riding rings among others

**RECREATION IMPROVEMENTS**



**BMX Park / Cyclecross Track**

A recreational park for trick riding with both bmx and cyclecross specific elements that would complement the skate parks that exist in Lone Pine and Bishop

**OHV trail**

Off-Highway Vehicle (OHV) trails allow for the recreational use of motor vehicles on cleared and graded “double track” trails. Potential OHV use is recommended 395 adjacent

**TRAFFIC CALMING**



**Traffic Circle**

Traffic circles, also known as roundabouts, are a traffic calming strategy utilized at intersections where traffic flows in one direction around a center island. Traffic circles are recommended at Fall Rd, Hwy 190, and Lake St intersections

**Crosswalk**

Crosswalks are pedestrian crossing areas composed of striping patterns that can also be raised to create a “speed table” which slows traffic, but is usually appropriate for roads with speeds less than 45mph. Crosswalks with pedestrian refuge islands are recommended at Fall Rd, Hwy 190, and Lake St.

**Roadway Narrowing**

Roadway narrowing is traffic calming strategy used along corridors and at intersections that narrows the roadway both visually and physically through the use of native planting “curb” extensions

**Flashing Beacons**

Flashing beacons are to be used with crosswalks to increase visibility and alert drivers of crossing pedestrians



**RIFFLES**

**WAYFINDING**



<b>Gateway Signage</b>	Gateway signage would be placed on the side of a building or structure to welcome users to the corridor and create a sense of place
<b>Enhanced Gateway Signage</b>	Enhance gateway signage would involve the development of a standalone signage structure that represents the local character and creates a sense of place
<b>Gateway Structure</b>	A gateway structure can be any kind of aesthetic architectural element spanning over the roadway
<b>Roadway Markings</b>	Roadway markings use the street to announce the corridor and add to the sense of place. Markings would be used throughout the corridor and draw from the locally iconic and well-loved Route 66 precedent

**BUSINESS**



<b>Grocery Store</b>	A grocery store would serve the local community and could attract drivers into the project area from US 395. Potential locations for several new businesses are identified throughout the corridor
<b>Museum</b>	A museum could serve as a tourist attraction and help to preserve and proliferate the rich history of the Owens Valley
<b>Gift Shop</b>	A gift shop selling goods unique to the area could attract visitors and encourage commercial activity along the corridor. Potential locations for several new businesses are identified throughout the corridor
<b>Visitor Center</b>	A visitor center is less formal than a museum and could provide similar educational and community-based services
<b>Brewery/ Taproom</b>	A brewery could increase commercial activity along the corridor, providing a key destination for visitors and locals alike to relax, eat, and drink. The area's pristine water has spurred the interest of brewers in the past
<b>Electric Charging</b>	An electric vehicle (EV) charging station could serve members of the regional Olancha community and provide a necessary service to some visitors. One Electric Charging station exists in Grant but does not service many types of EV's



*Above, Left to Right: A state of the art charging station near Inyokern; A public park with grass for recreation; Policy initiatives can spur redevelopment. This old gas station has become a restaurant.*

**POLICY INITIATIVES**



<p><b>Interim-Use Agreements</b></p>	<p>Interim-use agreements allow for currently underused buildings to be rented out at low cost until they are developed. Potential opportunity sites include the Gas Station at Lake St, Lemon Building, Bar Ranch, and the Cafe at 660 US 395. This strategy can help reduce blight, boost a local economy and potentially revitalize an area</p>
<p><b>Tax incentives</b></p>	<p>Tax Incentives for existing and new local businesses can help sustain and grow the economy which may feel pressure from the re-alignment</p>
<p><b>Land Easements</b></p>	<p>Land easements on county land adjacent to the corridor could be levied and leased to business interests or developed into public space and amenities</p>
<p><b>Mitigate Gentrification</b></p>	
<p><b>Zoning Code Amendments</b></p>	<p>Amendments to the zoning code could include re-zoning of property to facilitate adaptive reuse development</p>



**POOLS**

**PUBLIC GATHERING SPACES**



<b>Public Park</b>	A park in the project area with recreation/play activity areas open to all locals and visitors
<b>Dog Park</b>	Enclosed off leash park area for people to let their dogs run and play
<b>Community Garden</b>	A public garden and gathering place that provides produce and a local connection for the community
<b>Games/Play (non-kid)</b>	Interactive games/structures. E.g. horse shoes, bocce ball, other durable things you see at outdoor bars, adult swings
<b>Roadside Plaza</b>	Roadside plazas are stopping areas adjacent to the corridor with basic amenities meant to provide respite for drivers but can also act as public gathering spaces for locals as well
<b>Playground</b>	Playgrounds offer children a recreational outlet and giving children a safe place to play is important for any community
<b>Wildlife Viewing</b>	Wildlife viewing opportunities in this area would offer nature-enthusiasts the opportunity to observe some of the more subtle wildlife in the area
<b>Disc Golf Course</b>	A disc golf course can be expansive but is a relatively low-impact and low-cost recreational amenity and attraction. Can accompany trails and educational features

*Opposite, Left to Right: A concept for public art that highlights the surrounding landscape; This musical road in Japan entertains visitors; This sculpture in the Bay Area interacts with strong winds to create sound*





## AMENITIES



<b>Seating</b>	Seating allows for path users to take breaks and could also activate a public space. Seating could be located at trailheads, the public transit stop in Olancha, or at a school bus stop. Any seating in the area should include a shade structure
<b>Lighting</b>	Lighting in key areas could make the area feel more welcoming. Pedestrian scale lighting would not impact view of night sky
<b>Exercise Equipment</b>	Public exercise equipment can promote health and fitness in the area. This type of equipment is sometimes located near trails for those who want to do a full body exercise
<b>Picnic Benches and Tables</b>	A picnic area could potentially attract drivers from the 395 as well as provide gathering space for locals
<b>Public Trash Cans and Recycling</b>	Any new public gathering areas in the area should include a trash receptacle to reduce littering
<b>Public Restroom</b>	There may be a need for a public restroom to attract drivers from the 395 into the project area. Restrooms could potentially be placed in coordination with trailheads or roadside plazas

## PUBLIC ART



<b>Local Sculpture</b>	Artworks from local artist Jael Hoffman along the project corridor could attract visitors and create a sense of place
<b>Interactive Wind Sculpture</b>	The area's signature high winds could be harnessed by a sculpture that produces sound or movement
<b>Musical Road</b>	A musical road could serve as a tourist attraction and help to create a sense of place along the corridor
<b>Murals</b>	Murals are a low cost way to create a sense of place and could be ideally carried out by local artists
<b>Picture Frame Billboard</b>	Large billboard weathered steel frames could highlight dramatic views along the corridor and signify photo opportunities
<b>Roadway Paintings</b>	Paintings on the roadway itself are sometimes used to calm traffic and give a sense of identity

## CONCEPT PLAN



The concept plan integrates a variety of the design components and strategies outlined in the design toolkit to present a vision for the corridor that meets the community's goals for the realignment.

The concept plan breaks the corridor into three segments:

- **NORTH:** Cartago
- **CENTRAL:** 190 Junction
- **SOUTH:** Art + Haiwee

Each segment includes a number of recommendations related to speed and crossing improvements such as adding crossing warning signs, development opportunities such as adaptive reuse of vacant buildings, and trail and public space opportunities such as new multi-use trails, wayfinding elements, landscaping, and public art.

*Universal design improvements recommended throughout the corridor include:*



**SPEED REDUCTION TO BETWEEN 25-35 MPH**  
(warrant required)



**HIGH VISIBILITY CROSSWALKS**



**THERMOPLASTIC MARKINGS**  
to improve longevity



**SIGNAGE AND WAYFINDING**  
to destinations on and around the corridor

The study also includes design guidelines for crossing improvements, trail design, wayfinding and signage, and other amenities that should be considered when implementing the proposed recommendations.



*Top: Conceptual rendering of new crossing, bike lanes, trail, and offroad recreation services.*

*Bottom: New crossing with a playground and park area, and new outdoor dining space at the junction with Highway 190*

## NEXT STEPS

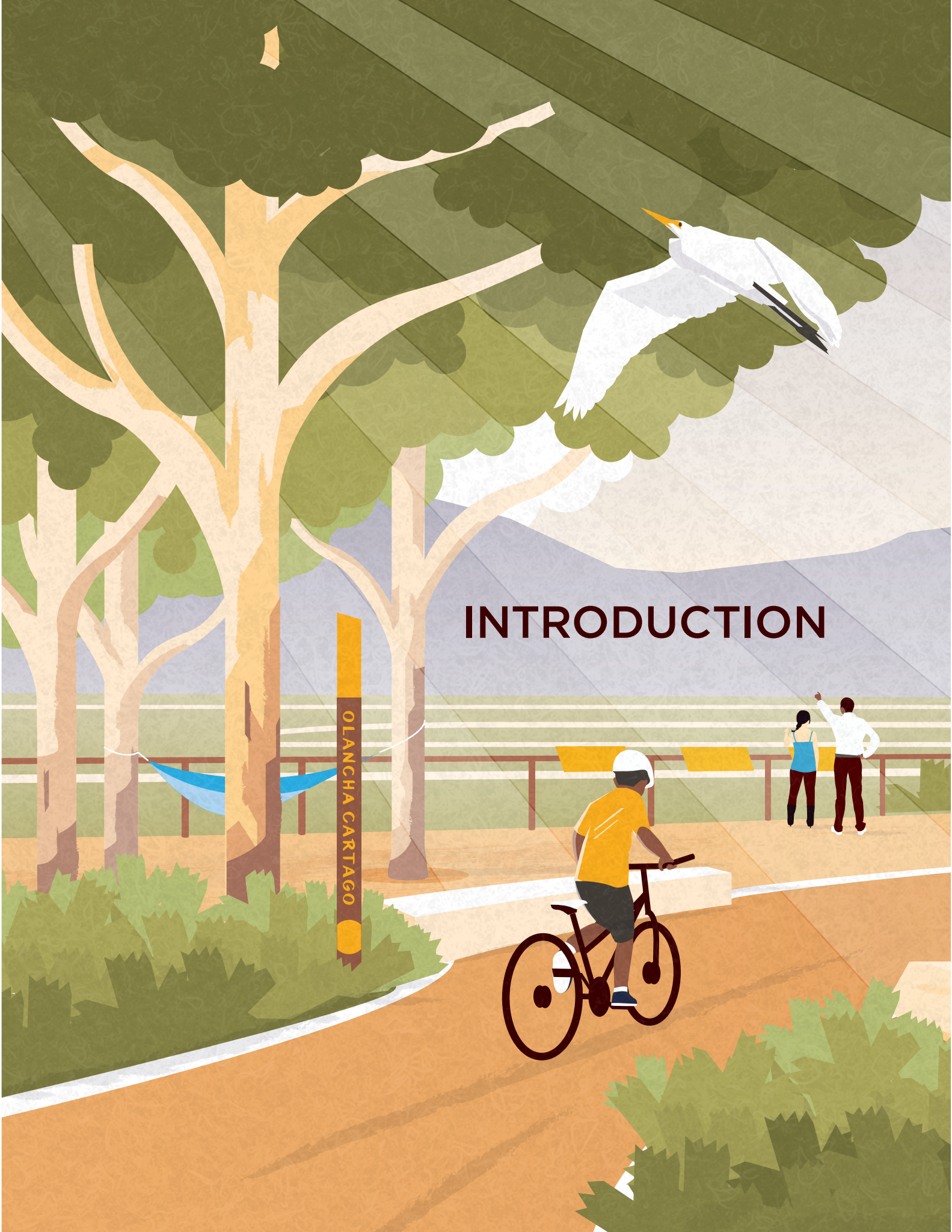
In order to implement the vision presented in the concept plan, the proposed projects would need to proceed into feasibility, detailed design, environmental review, and construction. The next step in this process is to secure funding to move these projects forward. Potential sources for funding are included in the Funding + Implementation section.

This study presents six projects that are identified as short-term, implementable, and community-supported initiatives. Each project includes cost estimates, a list of ideal funding sources, anticipated project partners, and conceptual cross sections for transportation improvements.

The County can prioritize these six projects when seeking funding to implement these concepts in the future, achieving short-term success and helping to realize the community's vision for the realignment.

# INTRODUCTION

OLANCHA CARTAGO







*Above: View of the Sierra Nevada from the sculpture garden in Olancha.*

## VISION AND PURPOSE

The Inyo Olancha Corridor Study presents a vision for the Olancha/ Cartago corridor that celebrates its unique landscape, history, and context and imagines a future in which the corridor is a recreational destination that draws visitors and creates opportunity for unique local businesses to thrive.

The Owens Valley is a dramatic setting, shaped by powerful natural and built forces. Standing in this landscape it is easy to feel dwarfed and humbled by the terrain; the flatness of the valley floor distorts one's perception of space, making it feel as if you can almost touch the peaks that lie several miles to the east and west. These ranges have been shaped and re-shaped by massive tectonic shifts, wind, and water over millennia. Human intervention has altered this landscape in just as many ways. The construction of the Los Angeles Aqueduct in the 1920s radically changed the landscape, transforming the valley that the Paiute tribe called Payahuunadu, or *the Place Where Water Flows*, into a desert valley. Snowmelt flows from the mountains and once created seasonal meadows, filled Owens Lake, and replenished the aquifers below. It is now diverted south to meet LA's water needs.

Through this landscape runs Highway 395, the road that carries people and goods to and through Owens Valley, often between Los Angeles and the town of Mammoth Lakes. The highway is being realigned around Olancha and Cartago and will divert this human movement—much like the water that once enriched the valley—away from these communities. This study delivers conceptual plans and strategies that Inyo County can employ to draw visitors to the corridor, enrich the local economy, and celebrate these unique communities.



## APPROACH AND GOALS

The Inyo Olancho Corridor Study involved robust community engagement and a deep analysis of the project site, available data, and regional plans to inform the recommendations contained in Section 3. These recommendations provide information that the Inyo County Planning Department can use to seek competitive grant funding to implement these concepts in the future.

*Above: View to White Mountains north of the study area.*

Community and stakeholder meetings held at the beginning of the project established the following goals for the study:

- Craft strategies to brand the corridor as a destination;
- Promote economic stability and growth;
- Maintain/increase visitors to the area;
- Expand active transportation options;
- Create connections to nearby recreational assets;
- Improve traffic safety; and
- Determine appropriate speeds through the corridor.

## CONTEXT AND SCOPE

### U.S. 395 REALIGNMENT

*Below: The study area sits below the looming peaks of the Sierra Nevada Range. Great amounts of water flowing out of the mountains are exported south to Los Angeles via the Los Angeles Aqueduct. Various reservoirs including the Haiwee Reservoir pictured below store water heading south. During different periods these reservoirs provided recreational opportunities for fishing and bird watching.*

In the Eastern Sierra, between the Sierra Nevada Mountains and the Inyo and White Mountains, U.S. Highway 395 runs north to south through Inyo County. Small towns of different size and development dot the corridor. Two small communities at the lower end of the Owens Valley are the towns of Olancha and Cartago, just south of Owens Lake. The segment of U.S. 395 that connects these towns is being realigned. This study explores how the former 395 alignment might take on new life once the primary highway connection is relocated.

The realignment and expansion of U.S. Highway 395, known as the Olancha/Cartago 4-Lane Project, will replace 12.6 miles of two-lane highway, creating a new four-lane divided expressway west of the present-day U.S. 395. The main purpose of the realignment and expansion is to meet present and future vehicular and goods movement traffic demands and bring Highway 395 up to current design standards. The \$83 million project is jointly funded by Inyo and Mono Counties' Local Transportation Commissions, Kern Council of Governments, and Caltrans with State Transportation Improvement Program funds.







## A NEW LIFE FOR THE CORRIDOR

Rather than widen the highway along its existing alignment, a new alignment will be created. What once was a two-lane segment of U.S. 395 will become a county road north of Route 190, while the southern portion will become 190-South.

In 2017, Inyo County was awarded a SB-1 Sustainable Communities Grant to analyze this eight-mile section of U.S. Route 395, determine what will become of the old 395 right-of-way, and study how the communities of Olancha and Cartago can respond to the realignment. The Inyo Olancha Corridor Study includes outreach to residents, stakeholders, and visitors to the area, and connects to previously established transportation goals set by Inyo County. This document outlines the process and recommendations of this grant-funded study.

## KEY DESTINATIONS

Today there are a number of key destinations along the corridor that help define the communities of Olancha and Cartago. For a detailed list of destinations, see appendix. Major attractions include:

- Businesses such as the Ranch House Cafe, Gus' Fresh Jerky Stand, Mobil, and Olancha Cafe provide services for locals and are road trip destinations for visitors. The Crystal Geyser bottling plant is the largest employer in the corridor, but does not provide services to visitors.
- Artists have been drawn to the area for decades. Jael Hoffman's Olancha Sculpture Garden is central in the corridor. The Metabolic Art Studio has conducted several art and community events just north of Cartago along Owens Lake at the former Pittsburgh Plate Glass (PPG) factory.
- California Historical Landmark No. 537, the Cottonwood Creek Charcoal Kilns, a relic from gold mining operations in the 1800s, lies north of Cartago, west of Owens Lake.
- Several motels and an RV park. Unique architecture, such as a giant lemon at a currently vacant motel site.
- Numerous trails and nature features that are either directly accessible from the corridor or are in close proximity to it, including the Cartago Wildlife Area, the Coso Wilderness Area, Haiwee Reservoir, Owens Lake Trails and Land Art, Olancha Dunes, and Olancha Peak trails.

*Right: Local businesses and features provide roadside interest as well as services for residents*



# ANALYSIS + OUTREACH



## PLANNING PROCESS

In order to imagine what the corridor might become in the future, it is important to first have an understanding of its history and current function. What follows is a brief overview of the region's natural and human history, as well as an inventory and assessment of land use, zoning, and current roadway conditions. These findings are synthesized to identify opportunities and constraints, and layered with feedback from the community to inform the design process.

## EXISTING CONDITIONS

### PROJECT AREA

The towns of Olancho and Cartago are small communities with less than 300 residents in total. Olancho is sparsely developed with several businesses, a post office, and one service station/mini-mart. Cartago is located approximately three miles north of Olancho and is primarily a residential community. The project area spans an eight-mile segment of the historic U.S. 395 corridor that connects the areas north and south of these two communities.

The bottling plant for the Crystal Geyser water company and livestock ranches are located between the two communities. A second water bottling plant and a solar farm are currently being constructed. Most of the residential development in the communities is away from the existing highway, but the residents rely upon U.S. 395 as their main corridor for traveling within the communities and accessing their properties.

## CONTEXT

### Geography

About three million years ago, the Sierra Nevada Fault and the White Mountains Fault systems became active. Repeated episodes of slip earthquakes gradually produced the impressive escarpments of the eastern Sierra Nevada and White Mountains, which together bound the northern Owens Valley-Mono Basin region.<sup>1</sup>

At one time, Owens Lake was up to 12 miles long and 8 miles wide, with a depth that reached as much as 50 feet. This massive lake sometimes overflowed to the south and into the Mojave Desert.

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<sup>1</sup> Hyndman (2000). *Roadside Geology of Northern and Central California*. Missoula: Mountain Press Publishing Company



*Stretches of the study corridor are undeveloped, with uninterrupted views of the foothills of the Inyo and Sierra Nevada mountain ranges.*

## Hydrology

The Owens Valley is the main water source for the City of Los Angeles. In the early 20th century, the Los Angeles Department of Water and Power (LADWP) completed the 223-mile Los Angeles Aqueduct and began to divert water from the Owens River to Los Angeles. By 1924, Owens Lake had become a dry lake bed as a result of this diversion. The LA Aqueduct system comprises the Los Angeles Aqueduct in the Owens Valley and a Second Los Angeles Aqueduct, just south of the Haiwee Reservoir, which was completed in 1970.

To the immediate west of the study area, the terrain changes greatly and steeply rises towards the peaks of the Sierra Nevada mountains. Many creeks flow out of the Sierra Nevada into the Owens Valley and though the aqueduct divides the mountains from the valley floor, creeks are able to cross the aqueduct over channelized bridges in select locations. Just to the north of the study area, Braley Creek emerges from the mountains to cross over the LA Aqueduct and under Highway 395 before draining into the southern extent of Owens Lake. South from there, Cartago Creek follows a similar route into the valley, landing just south of the town at Cabin Bar Ranch. Other smaller drainages flow towards the aqueduct and are guided alongside it towards Cartago Creek which they join at the bridge crossing over the aqueduct. Further south, Walker and Olancho creeks meet at the foot of the mountains before crossing the valley and flowing into Olancho at the Highway 190 junction. Finally, the southern extent of the study area lines up with Summit Creek which flows to the valley floor near the north end of the Haiwee Reservoir. A meadow sits near the center of the study area, east of 395, at the base of Owens Lake. This meadow is likely groundwater-fed, and is surrounded by rows of cottonwood trees.



### Development History

The Owens Valley was originally inhabited by the Owens Valley Paiute, who referred to themselves as Numu, or “people.” It was not until the mid-nineteenth century that the area was settled by non-native peoples who came to the area for mining and agriculture. The name “Olancho” is believed to be derived from the nearby Yaudanche tribe, while Cartago took its name from the Spanish name for ancient Carthage.

During the 1870s, the heyday of mining in the area, Cartago was a steamboat port for shipment of wood and ore. A stamp mill was built just south of Olancho Creek to process ore during this time period. The remains of a stone wall from this mill still exist and have been designated as a California Historical Site (marker #796).

After the mining boom subsided, Olancho remained an agricultural center. Many ranches raised livestock and grew produce, watered by abundant streams and springs.

In 1910, the Southern Pacific Railroad opened up access to Olancho with their Owens Valley Branch line. Coined the “Jawbone,” the railroad transported the construction materials used for building the Los Angeles Aqueduct.

*Above: A view of the LA Aqueduct just west of the project area*

### Property Ownership and Zoning

The majority of the land in the Eastern Sierra is publicly owned (96% in Inyo County and 94% in Mono County) and as a result, there has been little new growth outside of currently developed areas. Most of the private land is centered around the U.S. 395 corridor, and significant growth or development is anticipated within these communities, as the majority of private land has already been developed. Both the Inyo County<sup>2</sup> and Mono County<sup>3</sup> General Plans detail that any new growth will be concentrated within and contiguous to existing communities. 96% of the land adjacent to U.S. 395 is designated for Agriculture, Resource Management, and Open Space with the remainder designated for Residential and various Commercial and Industrial land uses. The study area is slightly atypical in this respect, as it contains a relatively large area of privately-owned land at its center (see Land Ownership Map).

Along U.S. Highway 395, Cartago's zoning is a patchwork of light industrial, single-family and mobile homes, multi-family, highway services and tourist commercial zones, and a rural residential zone district. Olancha has fewer single-family residential homes than Cartago and has more rural residential zone districts. General industrial and extractive industrial zones also exist, as do scattered highway services, tourist commercial zones, commercial recreation areas, general commercial retail districts, and public areas. Several parcels have been identified as 'Open Space - 40 Acre Minimum'.

### Demographics

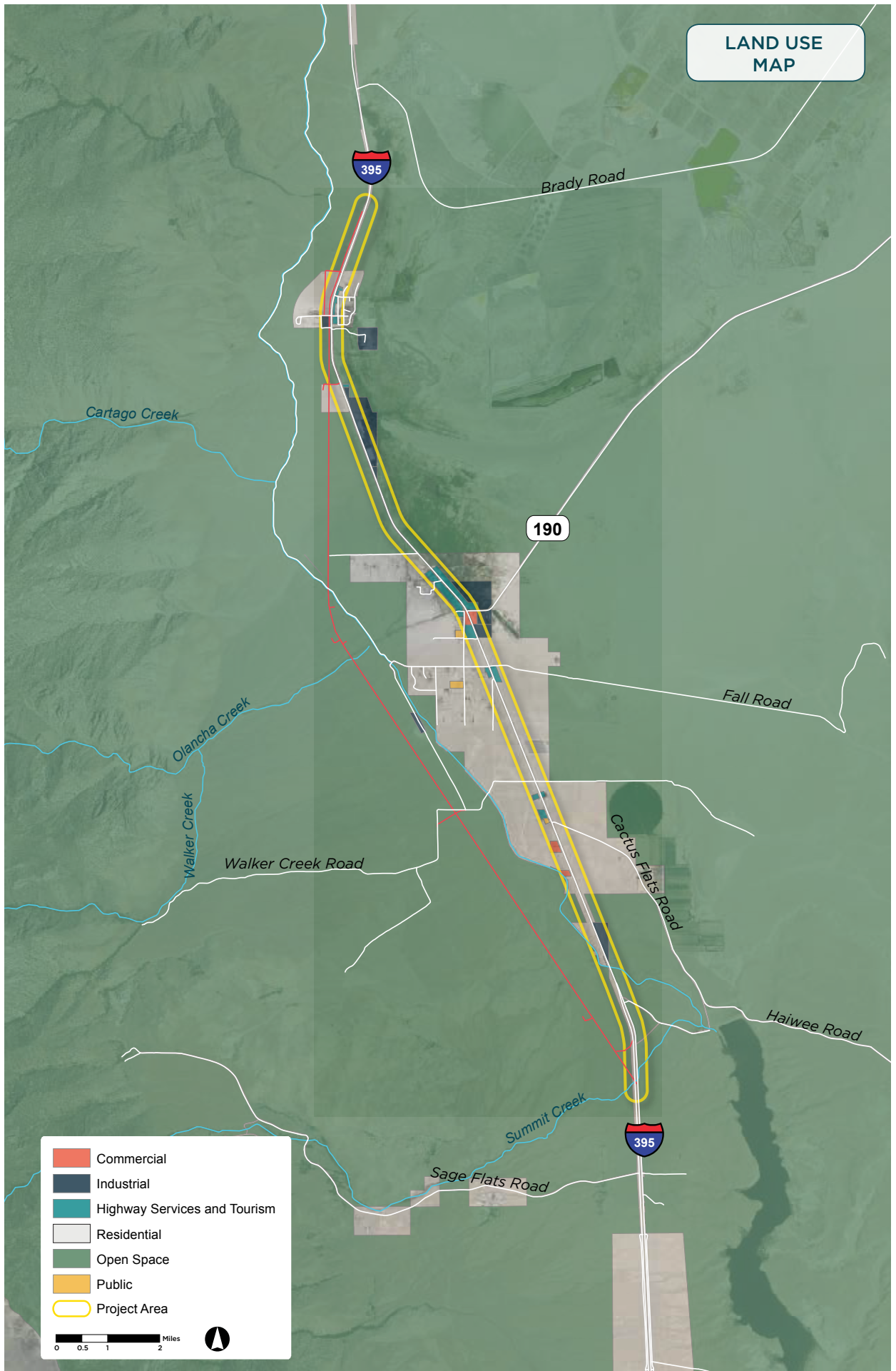
Both Olancha and Cartago have small populations, with a combined number of 284 people, 192 in Cartago and 92 in Olancha. The majority of residents are White, followed by Latino, multi-ethnic, and Native American people. The median age in these communities is 46. Home ownership in Cartago is slightly higher (63%) than in Olancha (56.3%).<sup>4</sup> For additional detail on demographics, see appendix.

<sup>2</sup> [http://inyoplanning.org/general\\_plan/index.htm](http://inyoplanning.org/general_plan/index.htm)

<sup>3</sup> <https://monocounty.ca.gov/planning/page/general-plan>

<sup>4</sup> "2010 Census Interactive Population Search: CA - Cartago CDP". U.S. Census Bureau.

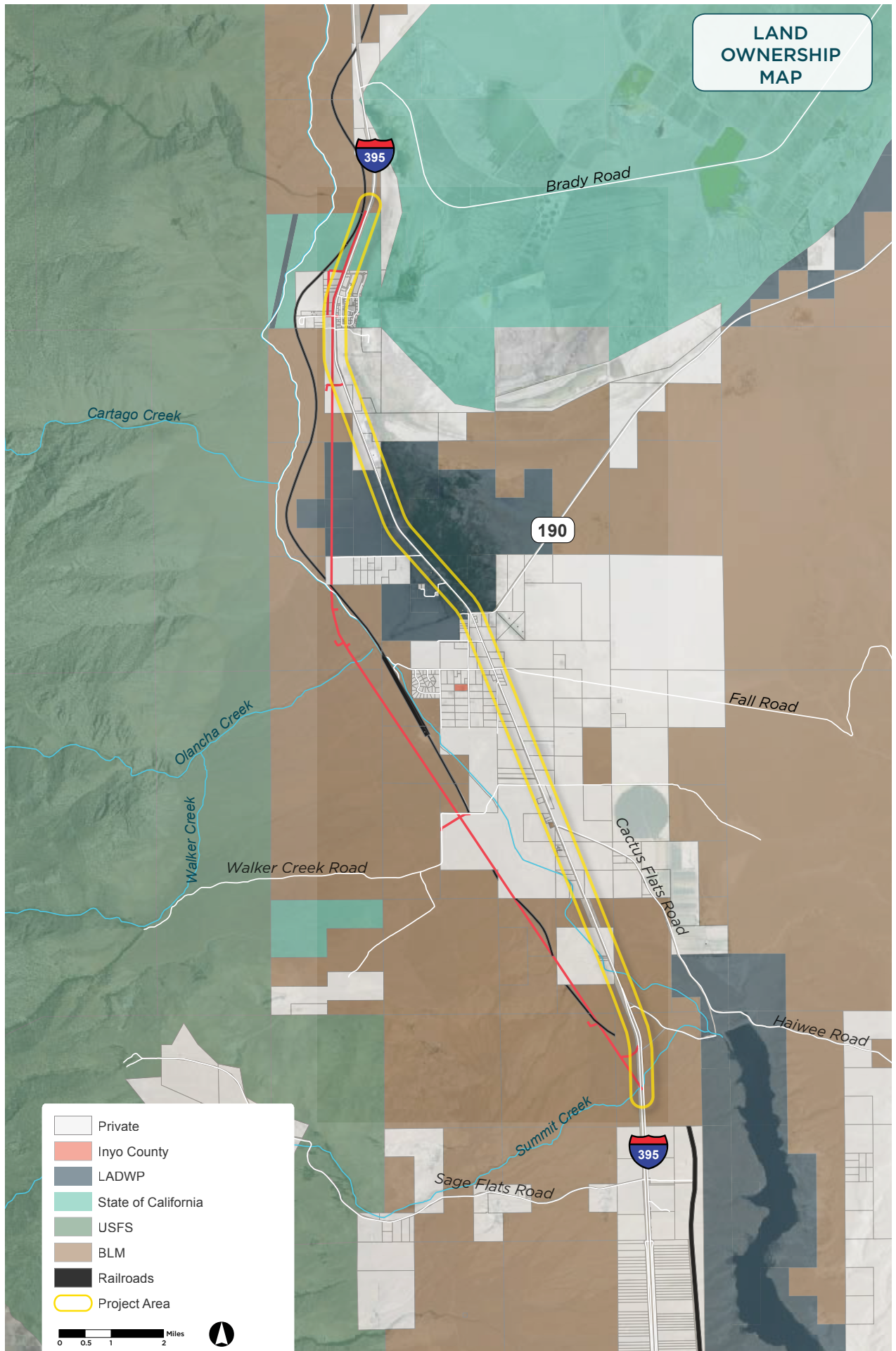




## EXISTING RELEVANT PLANS

A number of recent plans have focused on improving transportation options in Inyo County. They include:

- **Inyo County General Plan (2001):** Under the Inyo County General Plan Policy LU-1.2 New Growth, the County plans to accommodate new growth in existing rural residential communities (Olancha) and ensure proper infrastructure expansion. The circulation plan encourages voluntary reduction of vehicle miles and tracking of new development proposals through the use of innovative transit solutions. Goals in this plan include encouraging the use of non-motorized transportation and policies to plan for bikeway and trail systems based on the bicycle system in the Inyo County Collaborative Bikeways Plan. Although the economic plan does not include the study area, the County indicates a desire to grow the tourism sector of its economy and attract the film industry to the general area.
- **Inyo County Regional Transportation Plan (2015):** This plan assesses existing road conditions throughout the county and identifies the needs of the area. This 20-year vision plan is significant to the transportation needs of the region. U.S. Highway 395 in the Olancha and Cartago area is graded below the county's acceptable grade for Level of Service (LOS) and has high levels of congestion and collisions. The construction of the four lane highway project is expected to improve LOS to a grade of A.
- **Inyo Active Transportation Plan (2015):** The plan details the existing and proposed bicycle facilities in the County's Bicycle Element and shares information on pedestrian infrastructure. The last chapters of the plan give information on the recreational element, safe routes to school element, and a list of proposed active transportation projects. Inyo County does not have a pedestrian plan, although the existing Bicycle Plan recommends safer facilities for both cyclists and pedestrians. The majority of recurring regional State Transportation Improvement Program (STIP) funding is tied to the Olancha-Cartago four-lane project. Any non-motorized infrastructure and non-infrastructure projects must seek ATP funds.
- **Caltrans Interregional Strategic Transportation Plan (2015):** U.S. 395 is the major element in a transportation corridor connecting the Eastern Sierra region (Inyo and Mono Counties) and western central Nevada to Southern California. The corridor has been identified as a Strategic Interregional Corridor and is vital to the economy of the Eastern Sierra, which imports nearly all of its goods and materials. It is also a major recreational corridor serving Southern California and experiences heavy recreational use, as evidenced by over ten million annual visitor-days of recreation. An Origination and Destination Study found that 61% of the traffic on U.S. 395 was recreationally oriented and that recreational vehicles comprised 1.7% of the vehicle mix. Goods movement accounted for 9% of the total traffic. It also found that 47% of the vehicles originated in Southern California.



- Caltrans U.S. Highway 395 Transportation Concept Report (2017):** The Transportation Concept Report U.S. Route 395 District 9 (November 2014) reports on proposed projects and strategies within the District 9 section of the highway. There is no significant growth or development projected in the rural communities near U.S. 395. There are many planned and programmed projects for U.S. 395. The Olancha-Cartago portion of the corridor is performing below the concept level of service but will be mitigated by the construction of the 4-lane project. U.S. Route 395 is part of the National Highway System and designated as a High Emphasis Route and a Focus Route as part of the Interregional Road System. This segment is also designated as a part of the Strategic Highway Network (STRAHNET). There is motel lodging in Cartago and a Crystal Geyser bottling plant one mile south of Cartago which is a source of considerable truck traffic.

The widening of U.S. 395 was included as a key priority in the Inyo County Regional Transportation Plan and outlined in the Caltrans U.S. Highway 395 Transportation Concept Plan.

## EXISTING ROAD CONDITIONS

A detailed traffic analysis was completed in October 2018. What follows is a high-level summary. For additional detail, see appendix.

### U.S. Highway 395

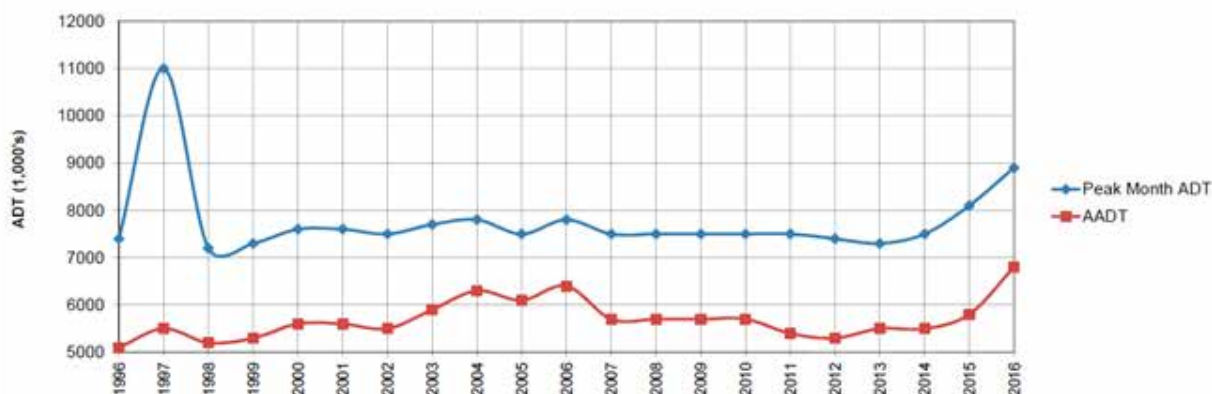
U.S. 395 is the key transportation corridor connecting the Eastern Sierra region (Inyo and Mono Counties) and western central Nevada to the southern California region. The corridor was identified as a Strategic Interregional Corridor by the 2015 Interregional Strategic Transportation Plan<sup>5</sup> and is vital to the economy of the Eastern Sierra region, which imports nearly all of its goods and materials. It is also a major recreational corridor serving Southern California and experiences heavy recreational use. An origination and destination study<sup>6</sup> conducted in 2011 found that 61% of the traffic on U.S. 395 was recreationally oriented, while goods movement accounted for 9% of the total traffic. The study also found that 47% of all vehicles originated in Southern California.

The existing U.S. 395 corridor in the study area is an undivided two-lane conventional highway with 12' lanes and 8' paved shoulders, which runs through Olancha and Cartago. Caltrans classifies this segment of U.S. 395 as "Other Principal Arterial." The speed limit is 65 mph north of Cartago and reduces to 55 mph approximately 1,000' north of Whitney Street in Cartago.

<sup>5</sup> [http://www.dot.ca.gov/hq/tpp/offices/omsp/system\\_planning/docs/Final\\_2015\\_ITSP.pdf](http://www.dot.ca.gov/hq/tpp/offices/omsp/system_planning/docs/Final_2015_ITSP.pdf)

<sup>6</sup> [http://www.dot.ca.gov/d9/planning/docs/o\\_d\\_study\\_2011\\_2.pdf](http://www.dot.ca.gov/d9/planning/docs/o_d_study_2011_2.pdf)

Figure 1: Historical ADT on US 395 South of SR-190



### SR 190

SR 190 is a two-lane corridor running east-west between Olancha and Death Valley Junction. It is an undivided road with 12' lanes and unpaved shoulders. The Federal Highway Administration classifies SR 190 as a Minor Arterial. The westernmost segment of SR 190 intersects the existing U.S. 395 alignment in Olancha, while the easternmost portion intersects SR 127 at the Death Valley Junction. The posted speed limit is 65 mph.

### County Roads

County-maintained surface streets access a residential area in Cartago and the Cartago Wildlife Area on the east side of U.S. 395, and a residential area on the west side of the road. Residential areas with county-maintained surface streets are also present in Olancha on the west side of the existing U.S. 395 alignment. Golden Trout Wilderness and South Sierra Wilderness are public lands that lie to the west in Inyo National Forest. The wilderness areas can be accessed by vehicle on Forest Service Road 19S01 from Walker Creek and 20S01 from Sage Flats Drive.

### TRAFFIC DATA

Average daily traffic volumes on U.S. 395 increased by an average of 3.6% per year over the 5-year period of 2012-2016 (per the most recent data available from the Inyo County Regional Transportation Plan). Over the past 10 years, daily volumes generally increased, with an average annual growth rate of approximately 1.4%. Over the past 20 years, daily volumes generally increased with an average rate of increase of approximately 1.8% per year.

*Below: Though counts along the corridor showed no bicycles, many of the roads connecting to U.S. 395 have drawn cyclists due to the dramatic scenery.*

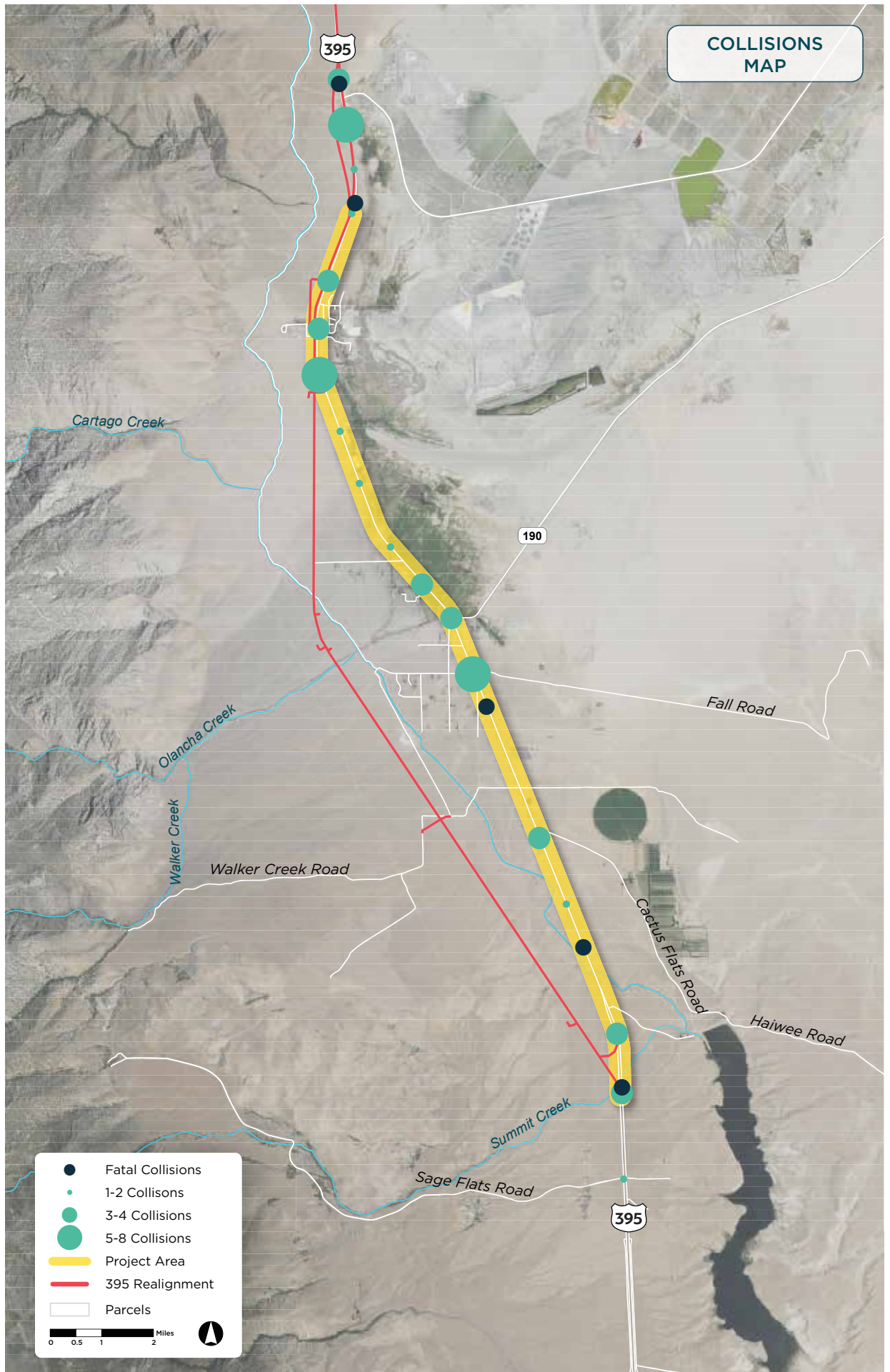
### **Existing Bicycle and Pedestrian Conditions**

In the project area, the U.S. 395 corridor has 8' paved shoulders with rumble strips, and there are no existing sidewalks or bike lanes. As part of this project, bicycle and pedestrian counts were conducted at several locations throughout the project area. No bicycles or pedestrians were observed at any of the locations where counts were conducted.

### **Traffic Safety**

Between the years 2006 and 2017, a total of 57 collisions were recorded within a mile of the study area. There were no bicycle related accidents, and one pedestrian related accident. Of the 57 collisions reported, five included fatalities.





## **OPPORTUNITIES AND CONSTRAINTS**

The towns of Olancha and Cartago are isolated, located 50 miles from the nearest large town of Ridgecrest to the south, and about 20 miles from Lone Pine to the north. The nearest major attraction to the east is 50 miles away in Death Valley. This isolation and closeness to nature is what draws many people to the area, but also presents challenges to a community whose economy is largely driven by tourism.

The map to the right and narrative below highlight major opportunities and constraints along the corridor. Opportunities include access to nature and proximity to existing trailheads or buildings with potential for adaptive reuse, while constraints include the reduced traffic volumes anticipated from the highway realignment that have potential to reduce business revenue. This analysis, coupled with community feedback, provides a key foundation for the conceptual design of the corridor.

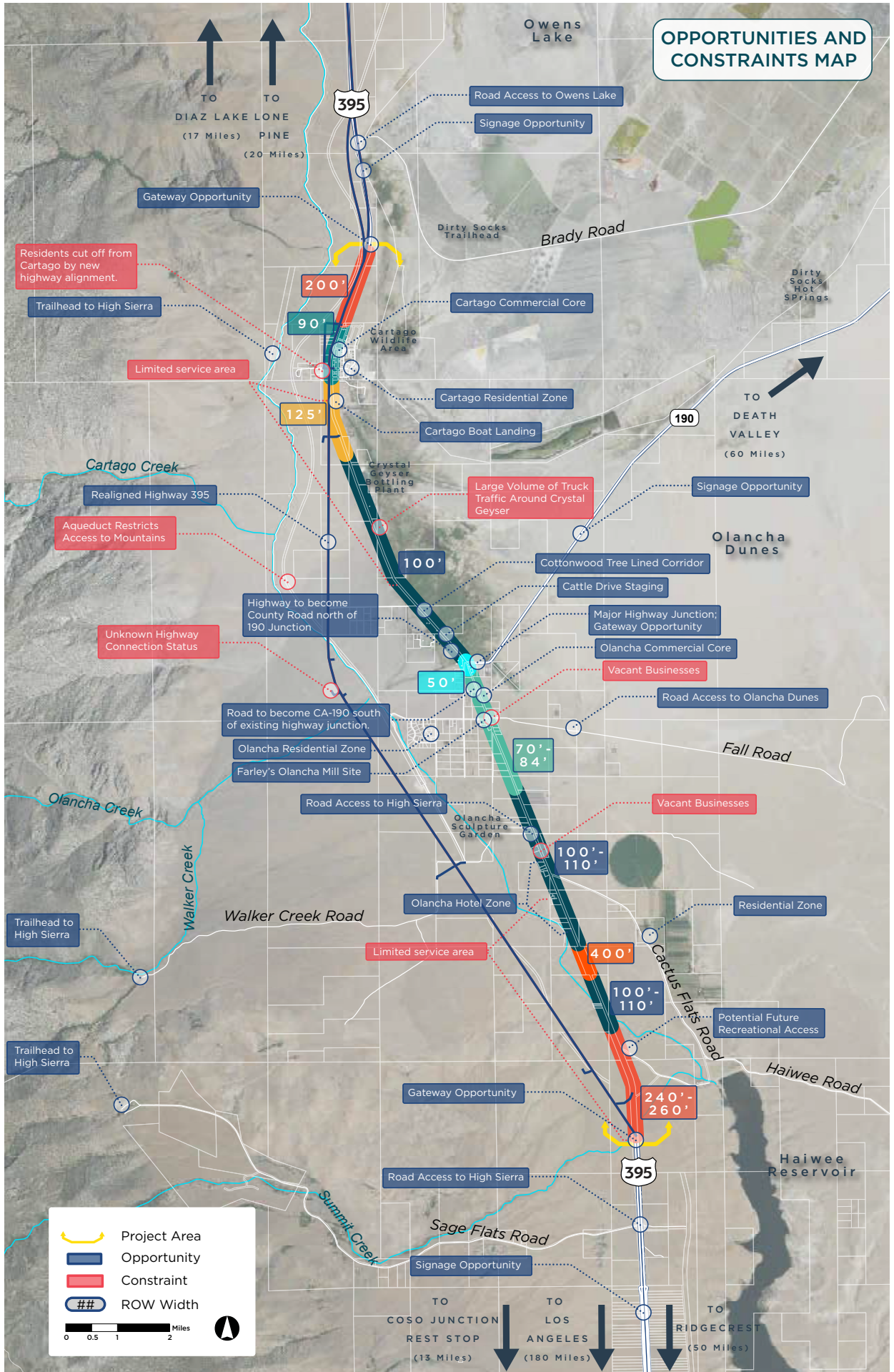
### **395 Realignment**

In the northern portion of the study area the realigned Highway 395 will parallel the historic alignment through Cartago. This will increase the separation and create a larger barrier between the eastern and western sides of the town. Although the proposed highway includes periodic under crossings, the new alignment will present a new obstacle for non-vehicular travel between the study area and the mountains to the west. Additionally, the new alignment includes a number of freeway exits with unclear connections, leaving a major unknown for potential access between the new alignment and the old.

### **Right-of-Way**

The road right-of-way (ROW) varies greatly along the eight mile stretch of the study area. Widths of the ROW range from 400' at the widest to 50' at the most narrow. The most common ROW width ranges from 90' to 125'. Greater variation occurs at the northern and southern ends. The junction of Highway 190 in Olancha features a width of 50'. Available ROW will be an important factor in determining what kind of new facilities can be proposed along the old highway.





### **Access to Recreation**

The study area is adjacent to a number of outdoor recreation opportunities. The immediate vicinity includes multiple trailheads with access to the Sierra Nevada mountains. Access exists at Walker Creek Road and Sage Flat Road in Olancha, and west of Cartago via dirt roads and a small bridge over the Los Angeles Aqueduct. Other recreational opportunities include the Coso Range Wilderness Area to the southeast of Olancha via Cactus Flats Road, the Olancha Dunes to the east via Fall Road, and the Cartago Wildlife Area to the east of Cartago via Whitney Street. To the north around the southern edges of Owens Lake, the Dirty Socks Trailhead and Hot Springs can be accessed from Highway 395 north of Cartago, and Highway 190 east from Olancha. Two features serve as barriers to these recreational features: the Los Angeles Aqueduct, and the new alignment of Highway 395.

### **Residential Areas**

Residential areas are clustered into two primary zones. In Olancha there is a primary residential zone west of the highway between Walker Creek Road and Highway 190, as well as a small zone along Cactus Flats Road to the east of Highway 395. In Cartago most residences are clustered between Whitney Street and Pine Street on both sides of Highway 395. The Cartago residential zone is bisected by the existing 395 highway, but will be further divided by the realigned highway which will run just to the west of the existing route. The proposed changes to the corridor will need to consider ways to support the existing community cores and increase opportunities to access recreational amenities.

### **Commercial, Hotel, and Tourism Zones**

The small commercial zones within the study area are located adjacent to the residential zones discussed above. Today, limited amenities exist in these zoning areas. Two eateries provide the biggest draw: the Ranch House Cafe, and the Fresh Jerky stand. In Cartago there is a small cluster of vacant businesses around Lake Street, while in Olancha the businesses are clustered just north and south of the Highway 190 junction, then more dispersed to the south towards Cactus Flats Road. Hotels are also concentrated in this area on the west side of the highway. Though many appear modest, these accommodations are frequently fully booked with tourists. Unusual architecture, such as the lemon house in the hotel district, provide unique attractions that draw visitors in addition to the landscape.



Vacant buildings in both towns can be adapted to new uses. Existing zoning designations, particularly around the 190 junction and planned 395 interchanges, present opportunities to build upon the hotels and businesses already there. Additionally, the county zoning code identifies visitor and tourism zones around the 190 junction and further north in Cartago. These have potential to support new services or a visitor center.

*Dirty Socks Hot Spring, northeast of the study area, was historically maintained for swimming, and now serves migrating birds.*

### **Gateways, Branding, and Signage**

There is currently very limited signage or wayfinding along the corridor to help guide people to the many recreational amenities nearby. New signage can promote local businesses, attractions, and can play an important role in drawing visitors and their potential business to the study area. The Highway 190 junction is a major gateway and signage opportunity.

### **Local History and Tradition**

There are two historical sites with monuments in the study area: the Cartago Boat Landing, where a steamship called the “Bessie Brady” carried silver and supplies across the Owens Lake from the Cerro Gordo mine; and Farley’s Olancha Mill, a historic stamp mill from the late 19th century that was used to process materials mined in the nearby mountains. Today, some traditions remain, including a cattle drive which brings hundreds of cattle from the valley floor up to the Golden Trout Wilderness in the High Sierra for the hot summer seasons, and back down to Olancha after the summer grazing season.

### **Traffic and Speed**

Current speeds through the study area are appropriate for a fast-moving highway. The 55-mph speed limit is a major constraint for safe crossing of the road, as well as for non-motorized travel. An opportunity to recommend lower speed limits presents itself with this study.

## **PUBLIC FEEDBACK**

### **COMMUNITY WORKSHOP 1**

On November 2, 2018 an open house event was held at the Ranch House Café in Olancha, CA. Representatives from the Inyo County Planning Department and Alta Planning + Design hosted the outreach event to meet with and hear from members of the communities surrounding the study area. Twenty-six community members attended the two-hour meeting. The majority of attendees lived within the study area. Representatives from the County and the consulting team introduced the project using a brief slide show and presentation boards which described the upcoming Highway 395 realignment and outlined the study’s goals.

Using stickers, the attendees communicated their preferences related to mobility, public space, and commerce and identity on presentation boards. City and consultant staff answered questions and engaged in dialogue about design ideas. In the mobility category, community members indicated a preference for multi-use sidepaths, cycle tracks, and bridle trails. In the commerce and identity category, people responded positively to business incentives that promoted innovative and iconic design and adaptive reuse of former gas stations. Additionally, there was enthusiasm for route branding and wayfinding as well as some interest in exercise equipment. Public space improvements received broad support; participants indicated interest in parks with native plants, walking paths, and dog areas, while others supported local sculpture and public plazas within the right of way.

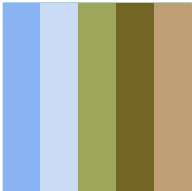


During the meeting, attendees shared concerns regarding the new highway alignment and improvements being made to the existing highway. Concerns included emergency vehicle access along the improved roadway, large truck traffic, and the speed limit. A few were concerned about how DWP staff would be able to access Owens Lake, and whether traffic would back up just north of town where the road reduced back to two lanes. Some expressed frustration about the lack of access to the mountains due to the presence of the aqueduct.

## COMMUNITY WORKSHOP 2

The second community open house meeting was held at the Ranch House Cafe in Olancha on Thursday, February 21, 2019. All of the community members in attendance were either from Olancha or Cartago. The project team presented four boards to the public that described the project overview and goals, the five corridor concept zones and the potential opportunities within them, and the corridor concept toolkit. Community members were asked to provide feedback on the improvements they would like to see in the project area by commenting on the boards, responding to a visual preference survey, and filling out comment cards.

### COLOR PALETTE



Desert landscape



Valley Sunset



Pop of Pink

### GATEWAY SIGNAGE



Rustic/Traditional



Existing Sierra



Iconic

### ARCHITECTURE



Kitsch



Main Street USA



Faux Western

The major themes that emerged were access, connectivity, and local history. Community members noted that there are often fence closures in the area that limit pedestrian access, and that the new corridor should provide safe access for pedestrians and hikers at every crossing. Attendees also indicated they would like to see increased connectivity between existing trails and recreational centers in the area, as well as improved access to the mountains. They also expressed a desire to highlight the history of the region through a meandering path that would connect local historical landmarks.

Community members favored preserving the existing look and feel of the project area, and expressed a desire for the new corridor to highlight the local history and landscape—a place “between extremes” and at “the edge of the middle of nowhere.” Preferred design elements included paved shared-use and unpaved paths to encourage recreation and improve connectivity, flashing beacons to improve safety for pedestrians, and new park space to encourage community gathering.

*A Visual Preference Survey was developed as a communication tool for community workshops.*

### **COMMUNITY WORKSHOP 3**

The third community open house meeting was held at the Olancho Cafe in Olancho on Thursday, August 29, 2019. All of the community members in attendance were either from Olancho or Cartago. The project team presented concept boards that revisited the project overview and goals, showed conceptual graphics for the corridor, and mapped out potential areas for future projects. Community members were asked to provide feedback on the concepts by marking up the boards and filling out comment forms.

The project had a positive reception overall. There was ongoing discussion of the Caltrans 395 realignment, and of adjacent projects at the Cartago Wildlife Area and the potential Inyo County Rail-Trail. County Supervisor Matt Kingsley was in attendance and shared his enthusiasm for the project, particularly the integration of art works into the area. Attendees discussed their own considerations for future businesses in the area, and the desire for more connectivity between the area's destinations. Attendees were receptive to branding ideas, and the concepts for new public space and businesses were well-received. Attendees also recommended inclusion of a disc golf course.

### **COMMUNITY WORKSHOP 4**

The fourth community open house meeting was held at the Olancho Cafe in Olancho on Tuesday, November 12, 2019, from 6pm to 8pm. Two weeks prior to the meeting, email notification was sent to previous project partners and attendees who signed at meetings and left their email addresses. All of the community members in attendance were either residents or property owners from Olancho or Cartago. The project team presented boards that summarized the project, but also went into detail on six specific potential future projects. Community members were asked to review the conceptual designs and provide feedback to the project team. At the beginning of the meeting, Alta staff presented the project's history, progress, and next steps.

There was ongoing discussion of the Caltrans 395 realignment and its potential future asphalt plant location. There was confusion among some attendees about this study, due to an article in the Sierra Wave, which presented the study as a branding project. These misconceptions were clarified, and attendees understood both the limits and the true intent of this study. Attendees mentioned heightened connectivity to mountain trails, to Death Valley, and the potential for new businesses in the area.

In all, 11 attendees signed in, and each were spoken to individually by Alta or Inyo County Planning staff. Three comment forms were received (attached), which discussed alternatives to the realignment overall, safety on the current highway, the potential future Caltrans “gravel pit”/“material yard,” and to expand the scope of the study to include the Sierras.

## **BOARD OF SUPERVISORS PRESENTATION**

Alta and County staff presented the project to the Inyo County Board of Supervisors on August 27, 2019. The presentation included an overview of the project background and goals as well as progress to-date. Project recommendations and concept graphics were included, and next steps were presented as the formulation of an implementation plan with specific projects, estimates, and funding sources. Supervisor Kingsley expressed excitement for the project, specifically about including public art, and was enthusiastic about rebranding the corridor. Alta plans to return to the Board before the end of 2019 or in January 2020 to present the final study.

## **BOARD OF SUPERVISORS PRESENTATION 2**

Alta and County staff presented the project to the Inyo County Board of Supervisors on November 5, 2019. The presentation included an overview of the project background and goals, progress to-date, discussion of six specific potential future projects, and next steps. Next steps included incorporating comments from this meeting, the Planning Commission, and the final workshop, and providing additional detail in cost estimates. Specific considerations from the Board included the following:

- Cartago Wildlife Area as a stopping/resting point for nature enthusiasts;
- Branding the area the “Sierra Highway Art Short Cut,” or similar, to pull people to creative artistic activities in the area south of SR 190;
- Plaza and concrete areas near the dry lake bed for walking, recreation, nature paths, etc.;
- Creating “relaxation points” where people can congregate for rest or destination;
- Mitigate impacts from economic disenfranchisement of community;
- Consider charging stations for electric cars.

Public comment included a discussion of the area as popular with birding enthusiasts, particularly the Cartago Wildlife Area. There is potential to include the area on future Audubon Society maps of the Eastern Sierra.



## **PLANNING COMMISSION PRESENTATION**

Alta and County staff presented the project to the Inyo County Planning Commission on August 28, 2019. The presentation took the same form as the Board of Supervisors meeting. Alta received feedback to make an edit to one of the maps, and received overall positive feedback from the commission. Branding and public art were again the most well-received elements. Alta informed the group that final draft of the study would be presented before the end of the year.

## **PLANNING COMMISSION PRESENTATION 2**

Alta and County staff presented the project to the Inyo County Planning Commission on November 6, 2019. The presentation took the same form as the Board of Supervisors meeting. Alta received overall positive feedback from the commission, but did not receive specific requests to add or modify the plan. Public comment included the same discussion of birding as the Board of Supervisors meeting.

# DESIGN TOOLS + CONCEPT PLAN





## DESIGN TOOLKIT

This design toolkit presents a collection of treatments and strategies that may be applied to the corridor and are focused on achieving the study's community-identified goals:

- Craft strategies to brand the corridor as a destination;
- Promote economic stability and growth;
- Maintain/increase visitors to the area;
- Expand active transportation options;
- Create connections to nearby recreational assets; and
- Improve traffic safety and speeds.

An expanded version of this toolkit can be found in the appendix of this document. Toolkit elements can be grouped into three broad categories:

### **Runs: Active Transportation, Safety, and Wayfinding Elements**

New facilities for pedestrians, hikers, bikers, and equestrians are feasible within the public right-of-way adjacent to the existing roadway. Bicycle facilities may also be easily integrated into the roadway utilizing the shoulder. These facilities will be connected by branded gateway and wayfinding elements. New and improved crossings are also recommended; specific crossing treatment options to improve safety and access are detailed in the Design Guidelines section.

### **Riffles: Active Areas**

These are active nodes along the corridor with hard programming elements. This can include business opportunity zones with existing businesses or vacant buildings that are candidates for adaptive reuse and activation; electric vehicle charging areas; new public gathering spaces such as parks; or interpretive sign programs. Areas throughout the corridor can also be activated with temporary programming.

### **Pools: Moments of Pause and Placemaking**

These are nodes along the corridor that serve as places for passive gathering or rest. These may include benches and shade structures at trailheads or overlooks; bird blinds or nature observation platforms; shade trees; and public art that beautifies the corridor and adds interesting elements.

The precedent examples that follow illustrate some key concepts that are well suited to the corridor.



*A bridle path adjacent to a roadway. This bridle path is physically separated from the roadway by a barrier fence.*

## **RUNS: ACTIVE TRANSPORTATION, SAFETY, AND WAYFINDING ELEMENTS**

An **equestrian trail** can be designed within the public right-of-way adjacent to the existing roadway. The design can be completed minimally without grading or clearing and using native materials.



*An example of a Class IV separated bike lane in Boulder, CO. In this case the bike lane is separated from the roadway by striping, parking blocks, and flexible vertical delineators.*

A variety of **bicycle improvements** can be incorporated into the corridor. Bicycle facilities that can be integrated into the existing roadway utilizing the shoulder include Class II bike lanes and Class IV separated bike lanes. Shared-use paths separated from vehicular traffic may also be incorporated adjacent to the roadway within the public right-of-way. In addition, amenities such as bike racks may be included to promote biking along the corridor.

## **RUNS, CONT'D: ACTIVE TRANSPORTATION, SAFETY, AND WAYFINDING ELEMENTS**

**Crossing improvements** such as high-visibility crosswalks with rectangular rapid flashing beacons (RRFBs) can be added to improve pedestrian safety along the corridor.



*An example of a high-visibility crosswalk with a rectangular rapid flashing beacon (RRFB) in Billings, MT. Source: Nacto.org*

**Natural surface trails** such as crusher fines trails with passive adjacent plant growth may be incorporated adjacent to the project corridor to provide new recreational opportunities for residents and visitors.



*An example of a crusher fines trail lined with native rock in Lomaki Wupatki National Monument, AZ. Source: Americantrails.org*



*A mural on an old water tank adjacent to Highway 395 welcomes visitors to the area and helps provide an identity for the corridor.*

**RUNS, CONT'D:  
ACTIVE  
TRANSPORTATION,  
SAFETY, AND  
WAYFINDING  
ELEMENTS**

**Branded gateway and wayfinding elements** can be included at areas along the corridor. These elements can direct users to local and regional destinations and help provide an identity for the corridor. They can also be used to highlight local history and geography.



*The City of Lancaster, CA is a local example of a musical road. Albuquerque, NM has also installed one along Route 66, pictured above, which plays "America the Beautiful."*

A **Musical Road** can be used to enhance safety through traffic calming while contributing to the identity of the corridor.

## **RIFFLES: ACTIVE AREAS**

**Policy initiatives** such as zoning code amendments can help spur local economic development by allowing for the adaptive reuse of underutilized or vacant buildings.



*An example of adaptive reuse of an old Standard Oil gas station into a restaurant in St. Louis, MO. Source: CNN.com*

**Amenities** such as electric vehicle charging stations could be added along the corridor to promote sustainable transportation in the area. Charging stations could also encourage users to visit local businesses while waiting for their vehicles to fully charge, promoting local economic development.



<https://www.greenbiz.com/article/californias-great-electric-vehicle-charging-build-out>

*Electric vehicle charging station. Source: Greenbiz.com*





*Badwater ultrarunners near Anza-Borrego State Park. Source: Badwater.com*

## **RIFFLES CONT'D: ACTIVE AREAS**

***Temporary programming*** and events could help activate the corridor by bringing new visitors to the area. The Badwater Cerro Gordo route of the Badwater Ultramarathon passes nearby. Partnerships and coordination with event organizers could help promote the corridor as a destination and encourage participants to visit the area.



*Temporary art installation as part of the Desert X exhibition in Coachella Valley, California in 2017. This event drew thousands to the area. Source: DesertX.org*

Other potential events include **art installations**, outdoor film screenings, food festivals, and farmers' markets.

## POOLS: MOMENTS OF PAUSE AND PLACEMAKING

**Trailheads** may include shade structures, benches, interpretive signs, drinking fountains, bicycle racks, native plant gardens, and other elements that promote rest, reflection, and provide an opportunity to absorb oneself in the landscape.



*Owens Lake Land Art. Image: Christopher Langley, KCET.org*

**Trail nodes** may include nature observation features, such as bird blinds, and may occur in association with interpretive signage.



*An example of a bird blind on the shore of Lake Fayetteville, AR. Source: Fayettevilleflyer.com*



*Street trees and landscaping line a street in Altamont, NY. Source: cdtcmpo.org*

**Landscape improvements** such as shade trees may also be used to encourage lingering and pause in particular areas.



*An example of a sidewalk "parklet" in a rural town in Ontario, Canada. Source: Developmentstudio.ca*

**Parklets** can be used to create additional seating or lingering space centered around commercial centers, local restaurants, or other community hubs.

**Public art** such as sculptures, murals, and roadway paintings can help beautify the area, provide opportunities for placemaking, celebrate local art and tradition, and develop a sense of identity for the corridor. Public art elements can become destinations in themselves, providing visitors with a unique photo opportunity along their journey through the Owens Valley.



*"Seven Magic Mountains" outside Las Vegas, Nevada is a large-scale public art installation by Ugo Rondinone. As a result of the exhibition's ongoing success a 3-year extension has been granted by BLM. Source: Deborahahl.com*



*Sculpture garden by Simi Dabah in Joshua Tree, CA. This installation is part of the High Desert Test Sites permanent exhibitions which draws visitors to the area year after year. Source: Joshuatreeguide.com*



*"A-Z West" outside Joshua Tree National Park, California is an art installation by Andrea Zittel located on over 70-acres. "A-Z West" hosts monthly tours of the compound as a fundraiser for High Desert Test Sites. Source: [highdeserttestsites.com](http://highdeserttestsites.com)*

**Public art** such as sculptures, murals, and roadway paintings can help beautify the area, provide opportunities for placemaking, celebrate local art and tradition, and develop a sense of identity for the corridor. Public art elements can become destinations in themselves, providing visitors with a unique photo opportunity along their journey through the Owens Valley.



*"Gradually/We Became Aware/Of a Hum in the Room" by Halsey Rodman near Joshua Tree, CA. This installation was part of "High Desert Test Sites", an ongoing arts collective founded in 2002. Source: [highdeserttestsites.com](http://highdeserttestsites.com)*

## BRANDING

Visual branding is a tool that can be used to unify the corridor, reinforce identity and place, and inspire investment in the area. Branding can tie into both physical infrastructure improvements such as gateway, wayfinding, and interpretive signs, or custom site furniture, as well as merchandise like postcards, t-shirts, and outdoor gear that might be carried at a future visitor center. Two preliminary branding concepts were explored for the corridor:



**Concept 1: Shadows on Sand:** This concept draws inspiration from the stark contrasts that exist within the study area. High contrast is seen between the grays and dull yellows of the dry grasses and open deserts, and the deep shadows cast by the mountains and built elements of Olancha and Cartago.



**Concept 2: Sierra Road:** This concept draws inspiration from the dusty roads and burnt-orange color of sunsets, soil, and steel. It integrates fonts and colors that have a historic feel and nostalgia that harkens to Olancha and Cartago’s history as mining towns and agricultural centers. Fonts and colors are more expressive and hand-rendered.



These concepts were hybridized to create a preliminary logo and color palette for the study area that integrates colors of warm sand and desert scrub, cool blues and grays of the mountains, and pops of fiery red and yellow.

#### **Naming the Corridor:**

Giving the corridor an easily recognizable and memorable name can help build branding efforts, increase visitor interest, and help promote overall discussion of the area. While deciding upon a name for the corridor is beyond the scope of this document, the following names emerged through the outreach process and may be considered during future development:

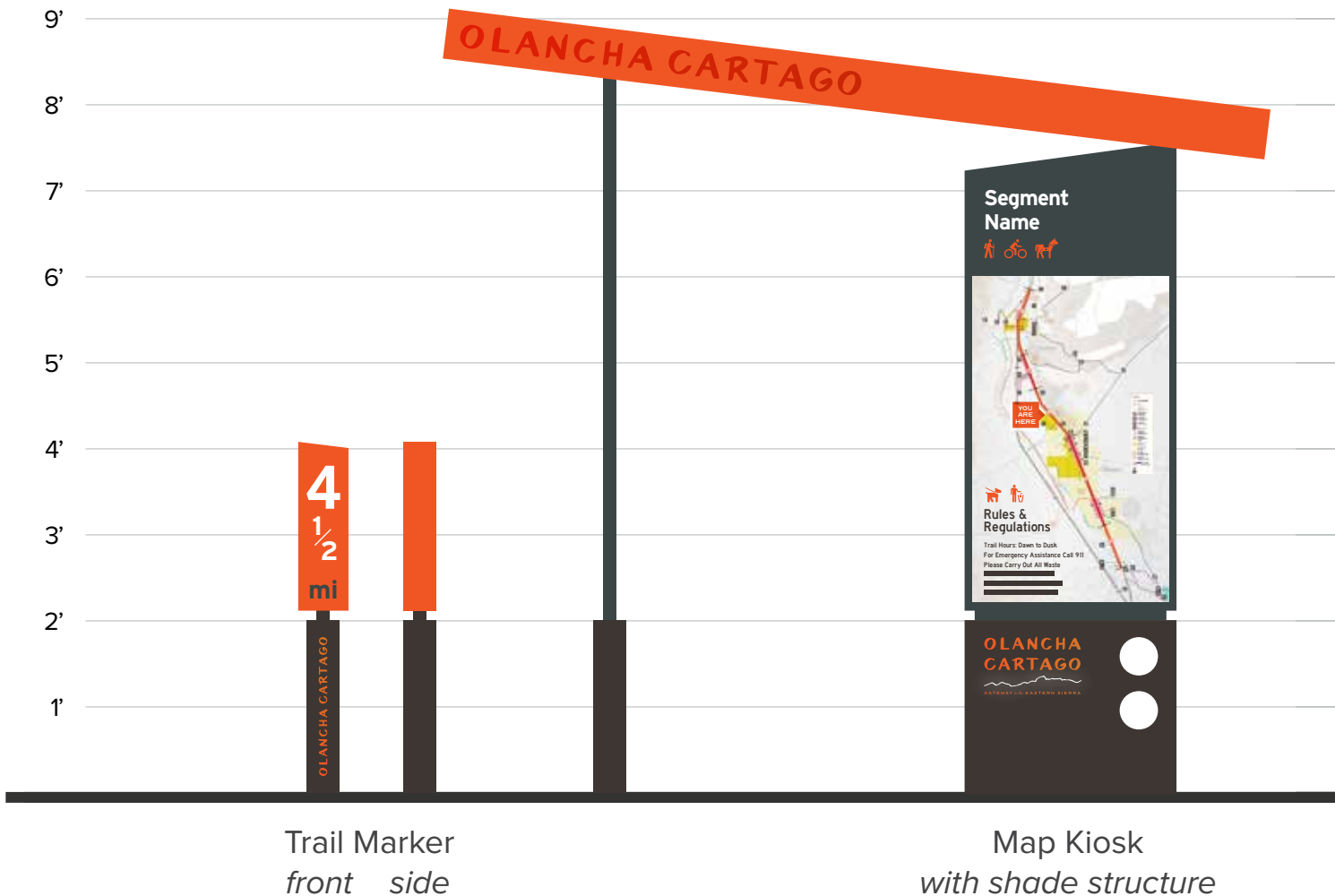
- The Eastern Sierra Starts Here
- Gateway to the Eastern Sierra
- Olancha-Cartago Art Bypass
- Sierra Highway Art Shortcut

## WAYFINDING

The wayfinding concept is inspired by local metal sculpture, the flared shape of historic motel signs, and factors practical considerations such as visibility from a distance, durability, and the ability to convey both high-level and detailed information.

## BRANDED COLLATERAL

Branded materials with a specific look, feel, and logo can be produced for distribution at local businesses and in adjacent towns like Lone Pine. They can be created by the County, the chamber of commerce, or private entities, and ideally do not place significant financial burden on existing businesses in the study area. This collateral can help strengthen the image of the area, heightening name recognition of Olancha and Cartago, encouraging repeat visits and sparking interest in those who have not yet visited. The Mammoth M is a local precedent, with stickers visible on cars throughout California and beyond.







Information Kiosk

Trailhead Marker  
front side

Turn Confirmation

## OLANCHA CARTAGO TRAIL CONCEPT PLAN

The realignment of the 395 highway means that this eight-mile corridor will take on a new life, not as a highway whose only purpose is to efficiently get people from point A to point B, but a vital connection between people, community, and nature.

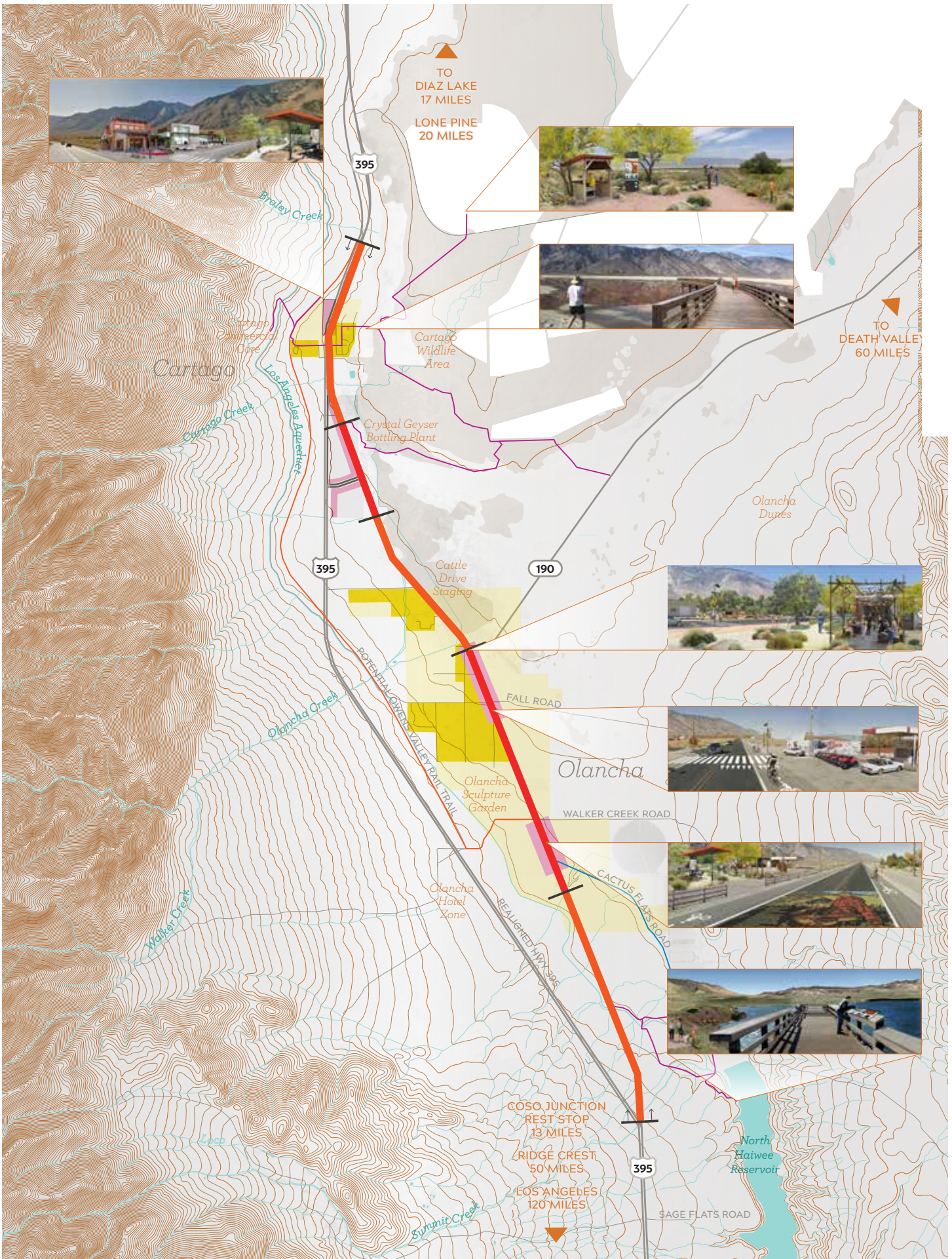
This place and this landscape are unique—they deserve to be experienced and absorbed at a slow pace—not bypassed. The natural morphology of a river system is a balance of three elements that provide inspiration for the conceptual design of the corridor: **pools**, deep and slow, are **places of pause and rest**; **riffles**, the turbulent patches of water that bubble over rocks and stones, inspire **active program areas**; and **runs** are deep stretches with faster water, moving and connecting like the **trail and active transportation elements**.

This study integrates a variety of design components and strategies, detailed in the design toolkit, that will serve the Olancha and Cartago communities, draw visitors, spur economic investment, and celebrate the history of the place.

When this study is realized, residents and visitors will enjoy a continuous multi-use trail that connects the communities of Olancha and Cartago, as well as new trails, art elements, and interpretive signs that reveal ecological and community history. Establishing park space, rest areas, and a visitor center can further attract tourists to the area. These upfront investments from the County, coupled with programmatic activation, will attract business investment and support the existing local economy.

### DESIGN APPROACH AND FEASIBILITY SUMMARY

Feedback from community members, coupled with a synthesis of existing conditions findings and a deep understanding of the context, have driven the recommendations of this study, the primary aim of which is to integrate active transportation facilities into the project corridor. Available right-of-way, land ownership, and adjacent land uses were the biggest factors in guiding the alignment recommendations.



Community members indicated a preference for user-separated trails, which can be accomplished by using the existing roadway surface and surrounding right-of-way. For the full length of the corridor it is feasible to add a bike facility using the existing pavement. North of Highway 190 this can take the form of a Class I shared-use path, created by carving a 5' planted buffer into the existing roadway to separate the trail from vehicular traffic. South of 190, Class II buffered bike lanes can be striped onto the existing shoulders, maintaining a clear 8' shoulder while also serving as a bicycle facility. These facilities can complement a separate multi-use sidepath adjacent to the existing roadway but still within the public right-of-way. The available right-of-way beyond the existing pavement varies from 5' to 80' with varying widths on the east and west sides of the road. Recommended trails have been situated to take advantage of wider stretches of the right of way, minimizing impacts to private property while providing a safe means of travel through the corridor, separated from high-speed traffic.

Universal design improvements recommended throughout include:

- Speed reduction to between 25-35 mph (warrant required)
- High visibility crosswalks
- Thermoplastic markings to improve longevity
- Signage and wayfinding to destinations on and around the corridor



## NORTHERN SEGMENT: CARTAGO

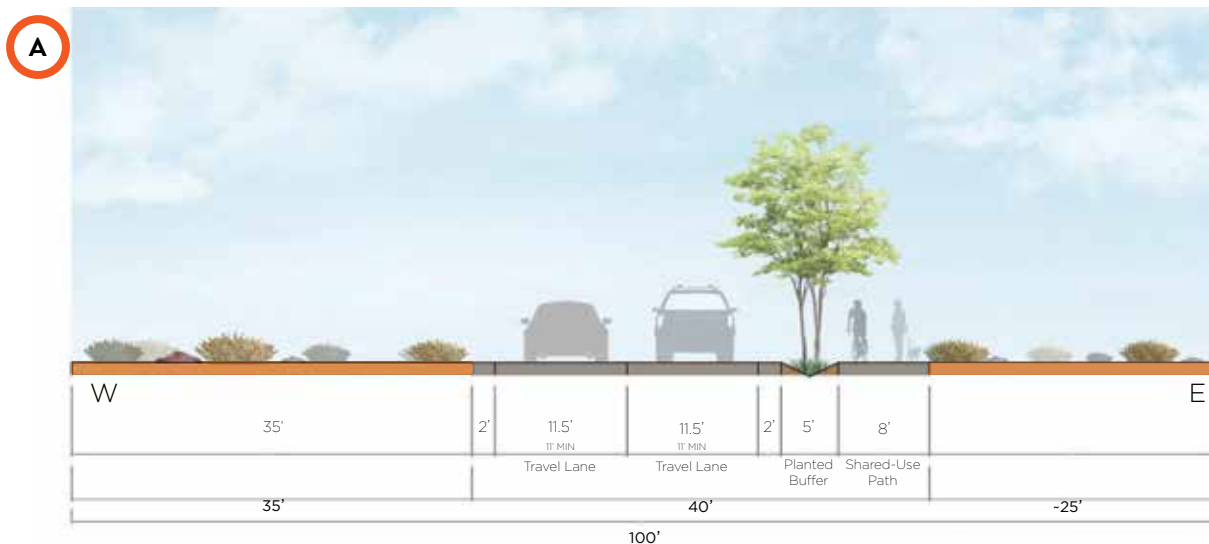
The northern reach of the corridor is a gateway to the natural features that abound in the study area. In this reach of the corridor, the new 395 alignment hugs closely to the western edge of the existing roadway. This condition makes an alignment on the east side preferable, which has adequate space for a natural-surface, multi-use path serving pedestrians and equestrians. A Class I shared-use path for bicyclists and pedestrians can be created by re striping the existing roadway, carving a 5' planted buffer into the existing roadway, and dedicating space along the east side of the existing pavement for the path. The shared-use path can extend south to the 190 junction.

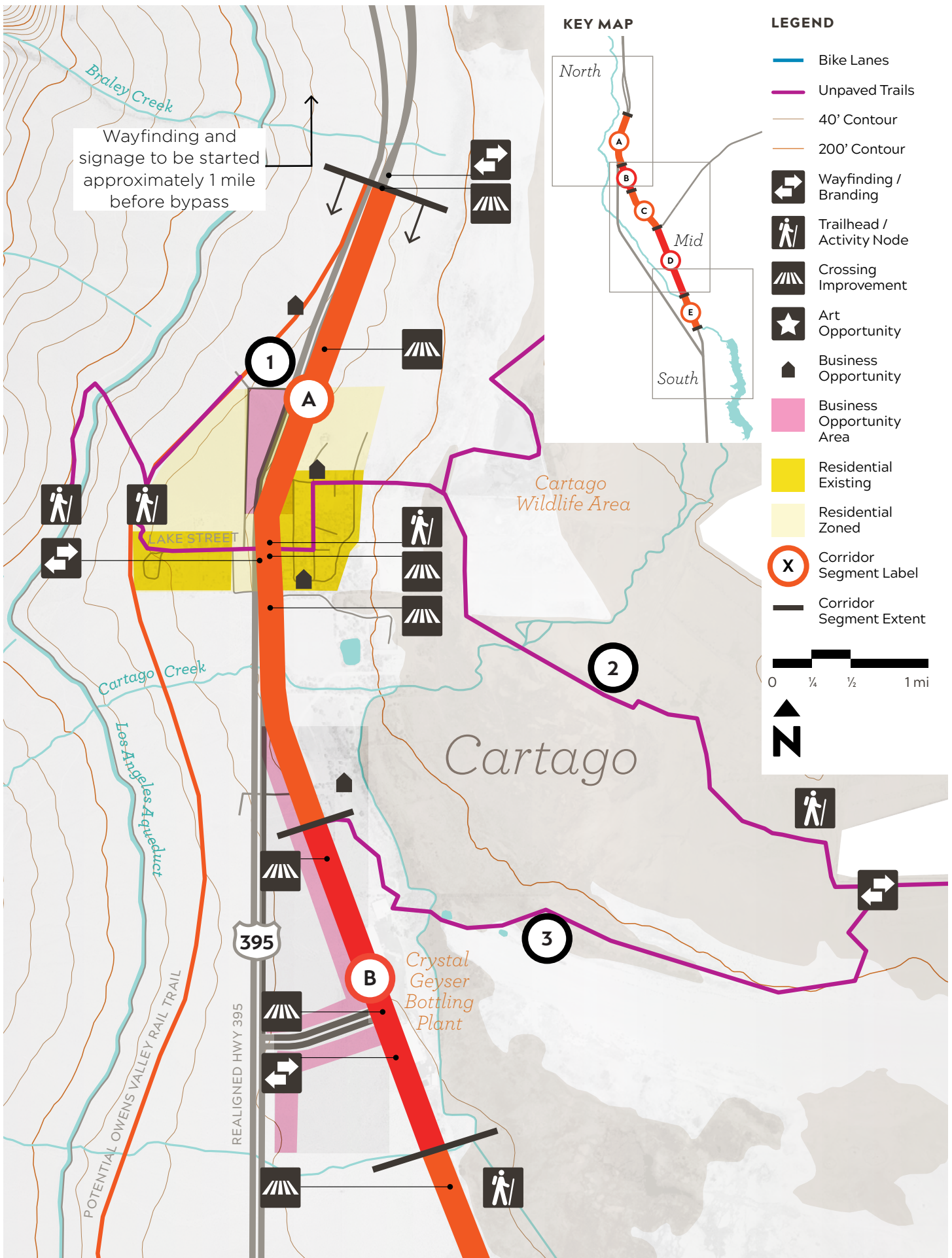
The interchanges that will connect the new highway to the study corridor are primary entry points to the corridor for drivers, and major gateway signage opportunities.

**Speed and Crossing Improvements:** The northernmost interchange at 395/Lake Street should be stop controlled on the north and south (existing 395) approaches, and coupled with a pedestrian crosswalk. As the new 395 alignment will increase traffic volumes on Lake Street, 'Stop Ahead' (W3-1) signs should be installed in advance of Lake Street, as well as 'Cross Traffic Does Not Stop' (W4-4P) signs.

Throughout this segment (north of 190), speeds of 25mph are recommended in keeping with a residential/tourism zone, though existing roadway geometry and the California speed trap law prevent such a drastic reduction in speed for the immediate future (see *Appendix, Traffic Signal Warrants and Speed Limits* for more information). A speed reduction could allow for new marked crossings of 395, reinforced by crossing controls, such as pedestrian hybrid beacons (if warranted) or actuated crossing lights. These may be located in areas where the trail alignment shifts from one side to the other, or where destinations are located. Crossing warning signs (W11-2) should be installed at major crossing locations. In locations where vehicles approach at higher speeds (over 30mph), advance warning signs (W11-2 supplemented by W16-2aP and W16-9P) should be installed 500 feet in advance of the crossing. Striping should optimally be provided using thermoplastic markings to improve longevity.

Below: Segment A, Typical Section







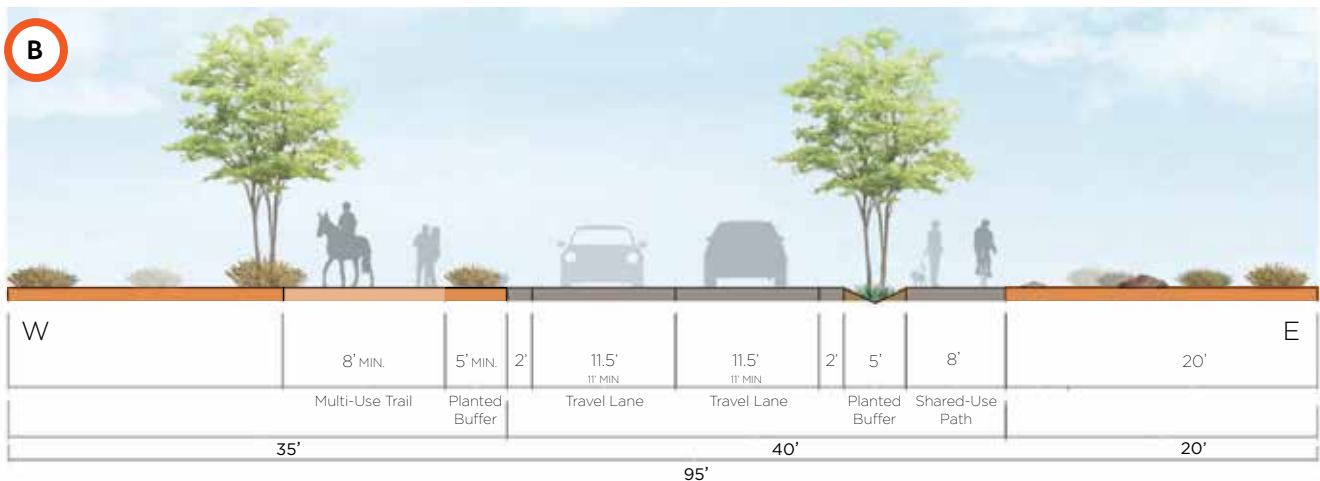
Above: Conceptual rendering of a new visitor center, trailhead, and supporting retail.

**Development Opportunities:** A triangular parcel of land is created by new roadways being constructed that connect drivers to the Lake Street interchange. This presents an opportunity for a visitor center and businesses that cater to the needs of drivers and truckers, as well as the core residential community of Cartago that is clustered around Lake Street. It is also an opportunity for gateway signage and branding to draw visitors through the corridor. Appropriately-scaled parking is recommended to serve both the needs of a visitor center and associated businesses, as well as trailhead parking.

**Trail Opportunities:** This northern reach of the Olancha Cartago Trail begins at Lake Street where there is potential for three new trails. A western Lake Street Trail connects users to an existing trail network just west of the Los Angeles Aqueduct. A trailhead serving this leg can be located near the visitor center. Electric Vehicle charging might be located in the visitor center’s parking lot to promote use of the adjacent trail facilities. A typical electric vehicle charges in 30 minutes, enough time to complete a short loop trail.

Below: Segment B, Typical Section

At minimum, trailheads throughout the corridor should have a shade structure, seating, bike racks, and a map kiosk. These trailheads are







also an opportunity to co-locate art elements and integrate corridor branding. An eastern Lake Street Trail takes users on-street to the northern most road in Cartago via Sierra Street. From this point a northern fork takes users to Owens Lake, and provides views of Inyo Mountains. A southern fork takes users on a loop trail through seasonal wetlands and, looping around past the Crystal Geyser Bottling Plant to rejoin the study corridor. This loop has potential to connect to Dirty Sox Trail and Hot Springs to the east of the study area.

*Above: Conceptual rendering of a bird blind and interpretive signage along walking trail*

Trails through these areas may include elevated boardwalk segments to navigate over sensitive habitat and seasonal stream flows. Passive activity nodes, such as bird blinds or nature observation decks, are recommended throughout to draw users along the trail.

Lastly, potential exists for a trail that utilizes the Union Pacific right-of-way, which is still controlled by the rail company. This is a great opportunity for rails-to-trails funding and could provide a regional attraction, adding bicycle connectivity through the Owens Valley.

*Below: A boardwalk allows for exploration over seasonal pools near the Cartago Wildlife Area*



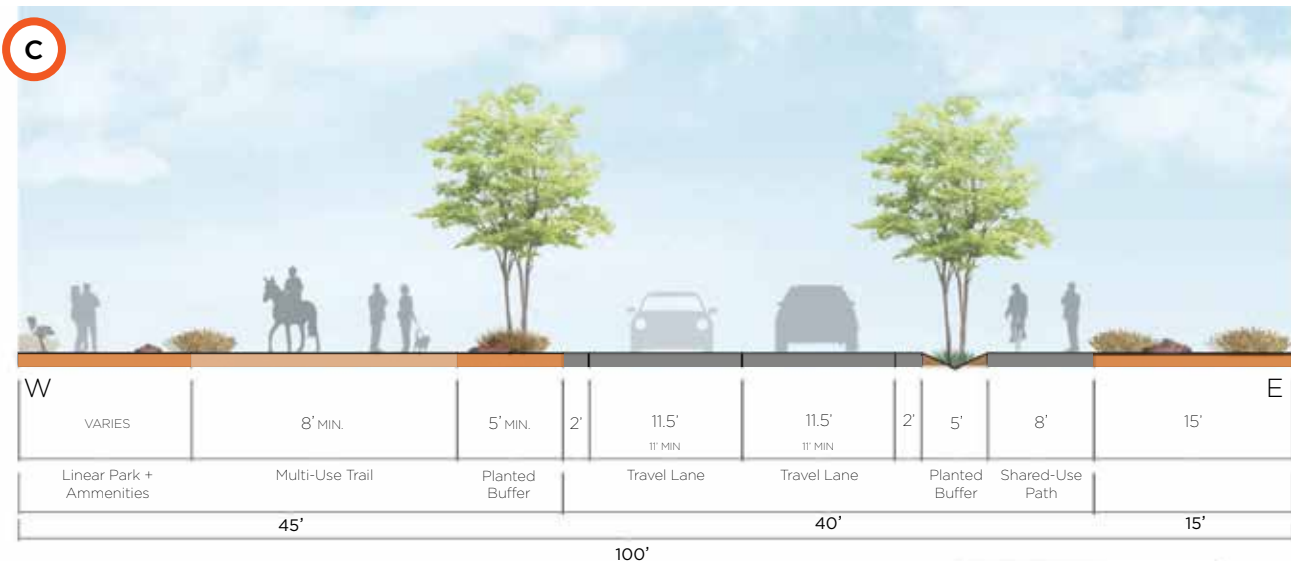
## MIDDLE SEGMENT: 190 JUNCTION

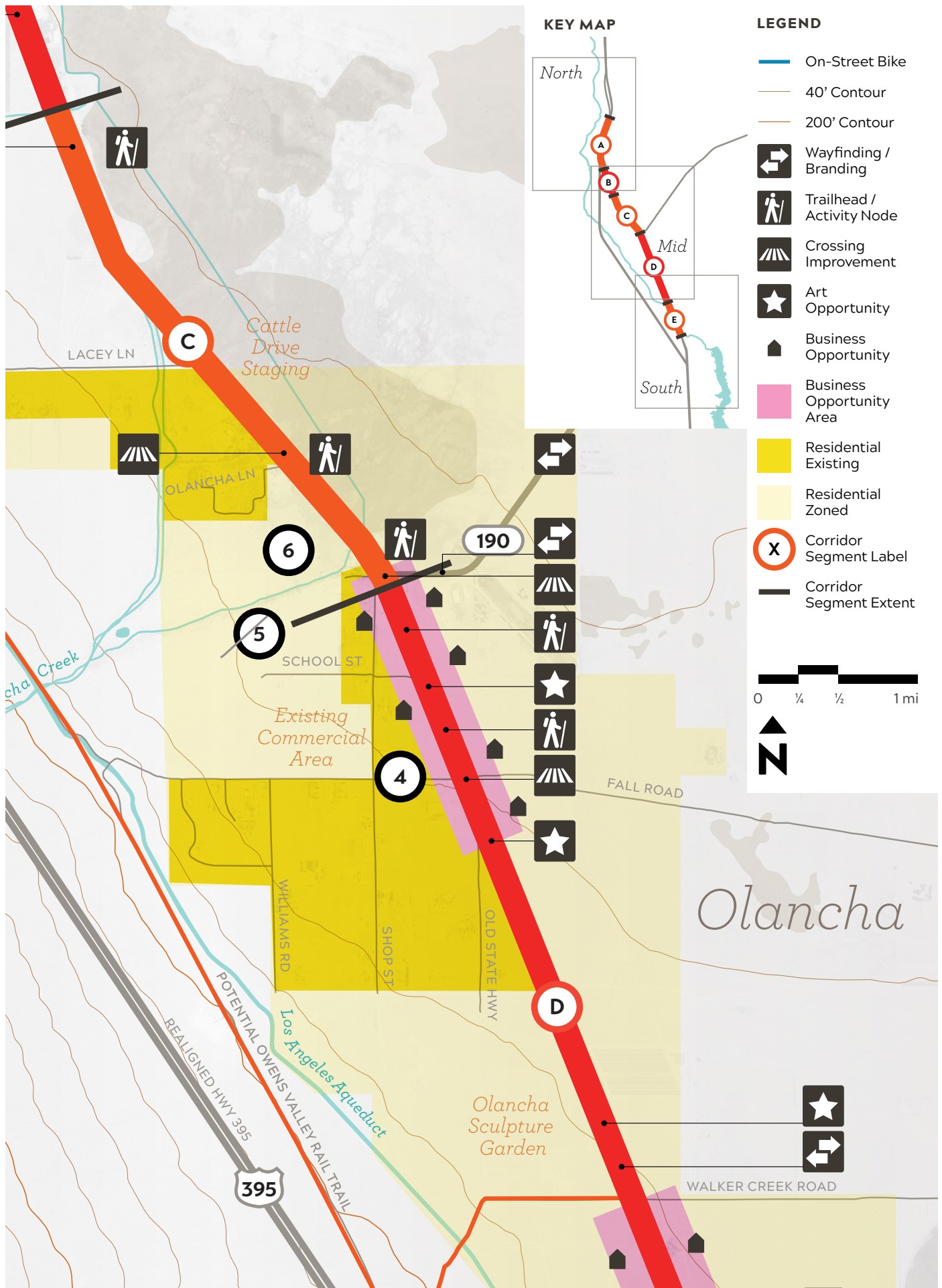
This corridor segment contains one of the remaining seasonal wetland/meadows in the study area, just south of the Crystal Geysir Bottling Plant. This area is used for cattle drive staging and grazing. There is no development between Crystal Geysir and Lacey Lane, leaving this area one of the more lush and untouched stretches of the corridor.

**Speed and Crossing Improvements:** Through segment C where there is a lower intensity of development, speeds of 35 mph are recommended, slowing to 25 mph in segment D where there is a higher concentration of residential and business development, although it is expected that a future Engineering and Traffic Survey would continue to define a 65 mph speed limit south of Olancha (on the renumbered SR 190 segment) and a 55 mph speed limit from Olancha to Cartago. A new crossing is recommended at Olancha Lane and Fall Road, both of which should be marked with crossing warning signs (W11-2) through segments C and D, and in segment C where speeds are above 30 mph, advance warning signs (W11-2 supplemented by W16-2aP and W16-9P) should also be installed 500 feet in advance of the crossing. Crossings are recommended where business activity currently exists or has potential to exist.

The 395/190 intersection will not meet minimum warrant volumes for an all-way stop, by a large margin, therefore the existing westbound stop sign on 190 should remain. The all-way stop warrant procedure is also used as a guideline for consideration of a roundabout, indicating that a roundabout is also not warranted. This intersection can be reduced in size to a single approach lane in each direction. This would provide the opportunity to improve the landscaping and “sense of place” at the intersection. The intersection design would still need to accommodate the truck design vehicle (maintain the current curb return radii), particularly for the northbound right turn.

Below: Segment C, Typical Section





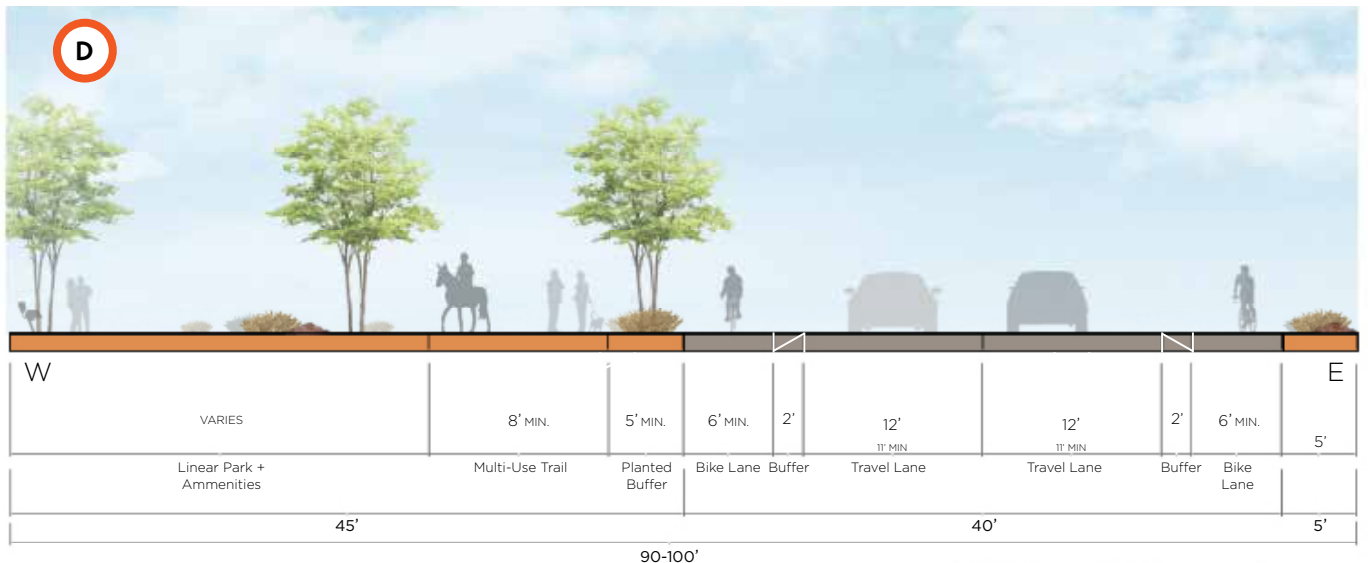


*Above: New crossing, bike lanes, trail, and offroad recreation services.*

*Opposite: Segment D, Typical Section*

The volumes at the intersection of the existing 395 and the access drive for the southern Crystal Geyser plant will not come close to meeting the multi-way stop warrant. Stop signs should be provided on the east and west approaches. While the traffic volumes on the east-west movements will be higher than on the north-south movements, there are more potential safety issues with stopping the higher speed north-south movements. The existing additional turn lanes at this intersection would no longer be warranted. They therefore can be removed and used for additional space for public amenities, landscaping, and trails.

**Development Opportunities:** The 190 junction is a major opportunity hub for the corridor. Visitors traveling to and from Death Valley use this route, making it a prime location for new businesses that cater to visitors. The existing Fresh Jerky business located at Fall Road is already a draw for visitors, as is the Mobil gas station across the street. Vacant structures surround the Jerky stand can be adaptively reused for new businesses. Proximity here to the Olancha Dunes make this an ideal location for an ATV rental or hot air ballooning business.





*Above: New crossing with a playground and park area, and new outdoor dining space at the junction with Highway 190*

**Trail and Public Space Opportunities:** Through segment C there is enough available ROW to provide user-separated paths. A natural-surface, mixed use trail is recommended on the west side of the roadway, and the Class I shared-use path will continue on the east side of the existing pavement, where existing mature Cottonwood trees provide shade and respite from heat. In segment D a trail is feasible on the west side of the corridor only. In lieu of separated off-road trails, it is recommended that on-street bike lanes be added through segment D. From this point southward the bike lane doubles as the shoulder for the newly designated Highway 190.

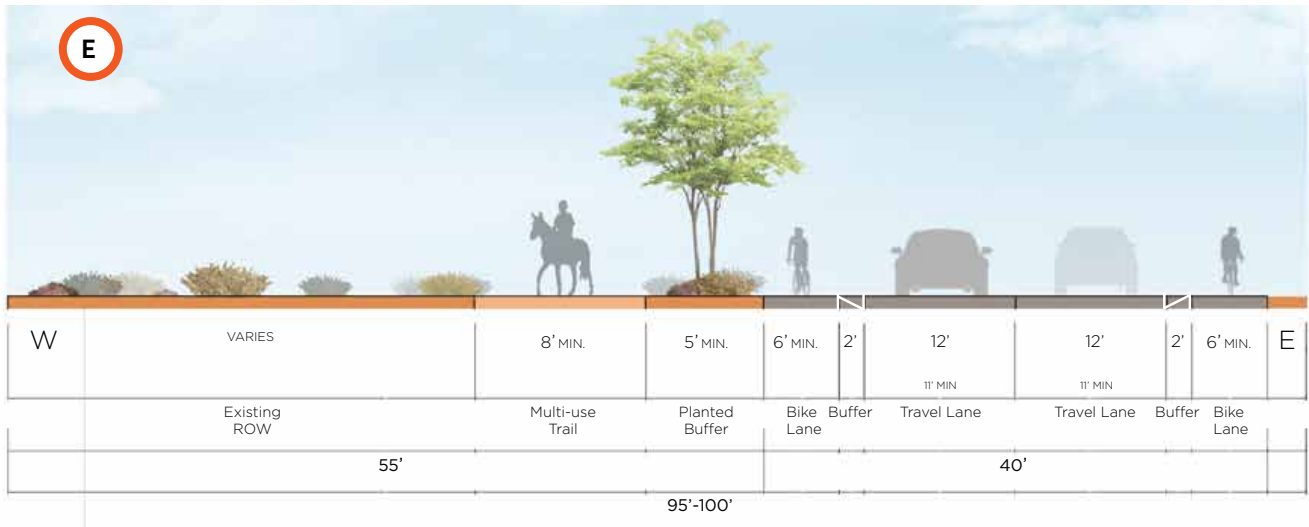
Opportunity for interpretive signs and new programmed public space exists just south of Crystal Geyser, as well as further south at Olancha Lane. These public spaces might take the form of a park space or a trail rest area with interpretive signage and amenities, as seen above.

Approximately half of Olancha's residential community is centered around Olancha Lane, and the Ranch House Cafe provides both food and community for many. The public space in this location should cater to community needs and interests, and consider the needs of visitors dining at the Cafe. At community meetings, residents expressed interest in play areas and dog parks.



*Below: Pedestrian crosswalks and new monument sign for Death Valley at 190 Junction*





Above: Segment E, Typical Section

As there is a lower density of activity through this segment of the corridor, potential to integrate public art, such as large-scale sculptures, can aid in drawing people along the corridor and reinforce slower traffic speeds.

There is an opportunity to develop an on-street bike trail along Cactus Flats Road that can take users further south to the Haiwee Reservoir.

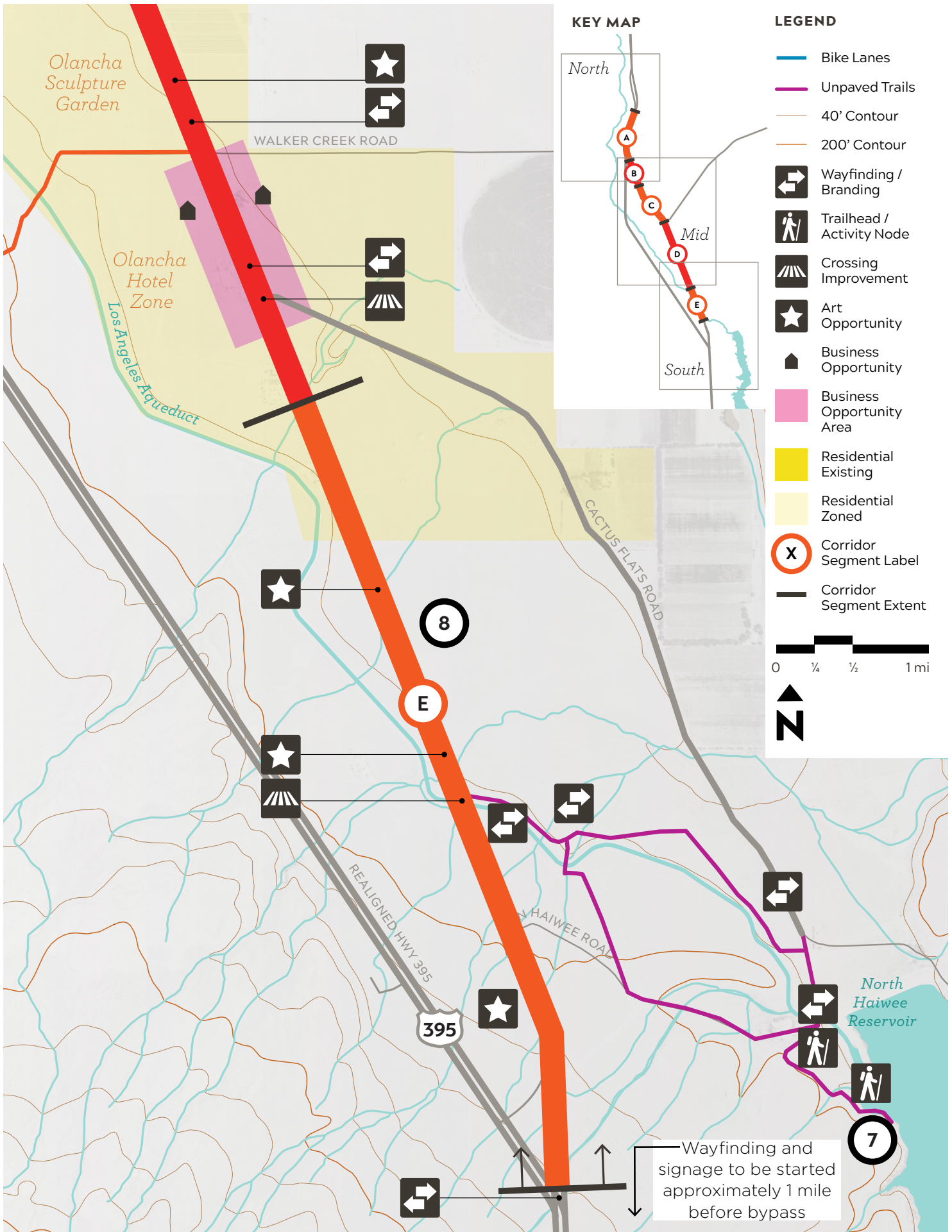
**SOUTHERN SEGMENT: ART + HAIWEE**

Through Segment E public art is envisioned to be the main corridor attraction. The Olancha Sculpture Garden is located in the middle of this segment, already a major destination for visitors. Building off of this momentum, additional art pieces can be added that will draw users along the corridor. This addition of art to the corridor can be a catalytic first investment by the County that will attract visitors to the trail and put it on the map as a destination, underscoring the regional tourism draw of the trail and inspiring development investment in the areas identified in pink on the map.

Below: Potential overlook and trail at Haiwee Reservoir









*Above: Trail node integrates shade structures and presents a business opportunity with adjacent vacant building. A musical road is proposed through this segment to provide traffic calming; at key nodes graphic elements may be integrated into the roadway.*

**Trail Opportunities:** Active transportation recommendations through this section are limited to on-street bike facilities because of the lower levels of adjacent development. A multi-use natural surface trail connecting pedestrians and equestrians to the Haiwee Trail is recommended on the west side of Highway 190. The proposed trail terminates at a dirt road just north of the Los Angeles Aqueduct, which can be utilized as a trail to connect users to the Haiwee Reservoir, should it reopen for recreational use. Here major opportunity exists for interpretive signage and trail nodes that connect users to the natural history of the area.

**Speed and crossing improvements:** A speed limit of 35 mph would eventually be ideal throughout this segment, though the existing roadway geometry and the California speed trap law prevent such a drastic reduction in speed for the immediate future (see *Appendix, Traffic Signal Warrants and Speed Limits* for more information). The only new proposed crossing is located at the unpaved road just north of the Los Angeles Aqueduct where there is a potential trail connection.

At the southern end of the existing alignment, advisory horizontal curve signs (W1-2) should be installed in both directions in advance of the curve, along with a 45 MPH advisory speed plaque (W13-1P), chevrons (W-18) and one large directional arrow (W1-6).

Because there is a lower level of existing development through this segment, and current zoning does not support significant future development, a musical road is proposed to add an additional layer of interest and to provide traffic calming. Music is generated by the careful spacing of grooves, like rumble strips, in the roadway that create a melody when driven over at a certain speed. This treatment is not immediately visible and can be reinforced by thermoplastic decals in the road that introduce art into the corridor and coincide with trail nodes.

# DESIGN GUIDELINES

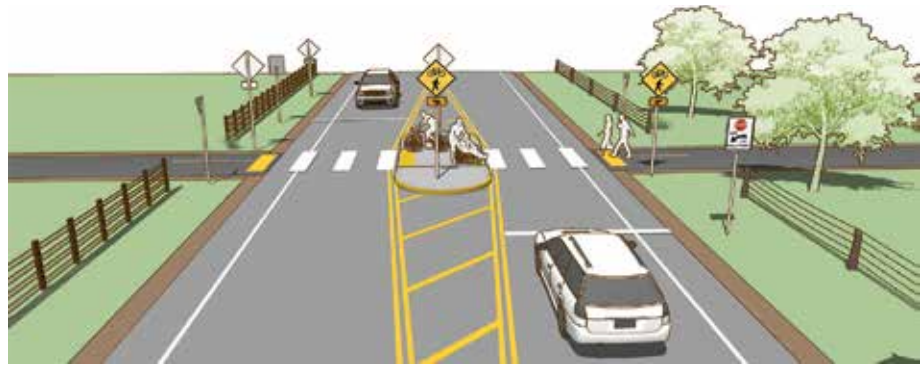


## DESIGN GUIDELINES

This study proposes a number of different design elements, some of which must be designed to be in compliance with local and national standards. This section provides a high level summary of those standards, as well as best-practice recommendations for amenity areas.

Motorists should yield right-of-way to pedestrians within crosswalks. Depending on state or local laws, motorists may also yield to bicyclists within crosswalks. The figures on this page identify recommendations related to marked crosswalk installation and enhancement by speed and volume on two-lane streets.

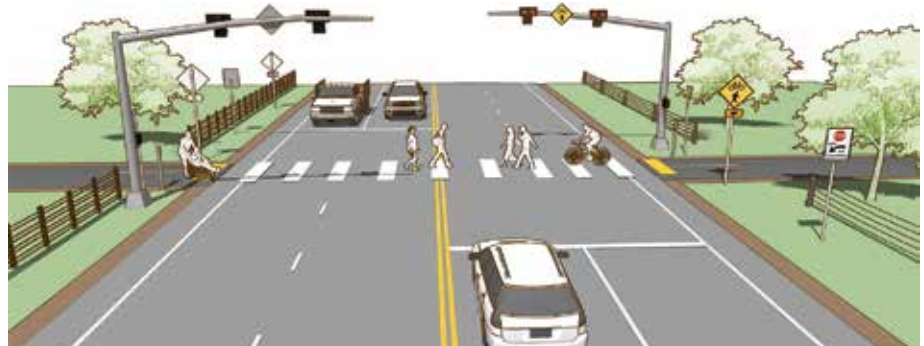
*A median safety island allows path users to cross one lane of traffic at a time. The bicycle waiting area should be at least 8 ft deep to allow for a variety of bicycle types. To promote yielding to bicyclists the median safety island should be designed to require horizontal deflection of the motor vehicle travel lanes.*



*Where yield compliance is low, rectangular rapid flash beacons can be used to draw attention to crossing path users and signal their intent to cross.*



*On multi-lane streets with high volumes and few gaps for crossing, a pedestrian hybrid beacon may be used to increase yielding rates.*



## CROSSING IMPROVEMENTS

FHWA Safety Effects of Marked Crosswalks at Uncontrolled Locations 2005 recommends crossing enhancements on high-speed and high-volumes roadways where crosswalk markings alone are not a viable safety measure.

### Marked Crosswalks

A basic marked shared use path crossing consists of a marked crosswalk, plus signs and other markings to slow or stop traffic. Crosswalk markings establish a legal crosswalk at areas away from intersections.

Crossing sign assemblies and advance crossing sign assemblies using W11-15 and W16-7P signs should be used to warn users of the crossing location. High-visibility crosswalk markings are the preferred marking type at uncontrolled marked crossings. Transverse lines are “essentially not visible” when viewed from a standard approaching vehicle (ITE 2010).

### Median Enhanced Crosswalks

Median islands are beneficial on roadways with high volumes and/or high speeds, and on roadways with three or more travel lanes. Median islands particularly benefit people who may travel more slowly, such as children, older adults, and people with disabilities.

Median islands are an FHWA Proven Safety Countermeasure.

### Active Enhanced Crosswalks

Where greater visibility or traffic control is desired, a rectangular rapid flash beacon (RRFB) or pedestrian hybrid beacon (PHB) may be used, if warranted.

- RRFBs are a yield enhancement device for use at uncontrolled crossings. They may be configured with solar power where it is the most cost-effective option. See FHWA Interim Approval 11 2008 for guidance on the application of RRFBs.
- PHBs provide a red signal indication to drivers, and create yielding rates similar to that of a conventional traffic signal. PHBs are particularly useful on undivided roadways with multiple lanes in any one direction. PHBs are an **FHWA Proven Safety Countermeasure**. See FHWA Pedestrian Hybrid Beacon Guide 2015 for more information.

## TRAFFIC SPEED

It is recommended that traffic speeds throughout the corridor be reduced from the existing 55 mph, consistent with highway speeds, to speeds more appropriate for a community road, closer to 25 - 35 mph. To do so will require an additional traffic study and potential physical modifications to the roadway.

Speed limits must comply with the California “speed trap” law (Vehicle Code Section 40802), which requires that speed limits generally be set close to the 85th percentile observed travel speed, except where an Engineering and Traffic Survey warrants a deviation.

There is an exception for a local street or road, but this segment does not appear to meet the definition of a “local street or road” under this law: a local road must primarily provide access to abutting residential property and it cannot have more than ½-mile of uninterrupted length, which is not the case in this corridor.

Away from specific locations (as discussed below), the straight and flat alignment will tend to result in similar 85th percentile speeds in the future. We expect that a future Engineering and Traffic Survey would continue to define a 65 mph speed limit south of Olancha (on the renumbered SR 190 segment) and a 55 mph speed limit from south of Olancha to Cartago.

## TRAIL AND PATH TYPOLOGIES

### Multi-use Trail

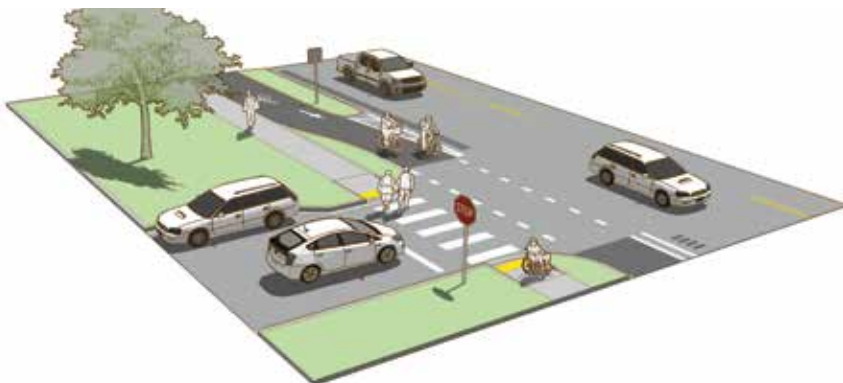
It is recommended to separate stock (horses and mules) from bicyclists, as the sudden appearance of bicyclists traveling at speed can unnerve stock animals. A physical separation or barrier should be employed between a stock trail and roadway. The minimum recommended width for multi-use trails (horse and pedestrian) is 8ft to 12ft with an additional 3ft to each side to allow for passing and clearance from adjacent vertical elements. The minimum overhead clearance is 10ft to 12ft. For more information see the USDA “Equestrian Design Guidebook for Trails, Trailheads, and Campgrounds”.

### Bike/Ped Shared-use Trail

10ft is recommended in most situations and will be adequate for moderate to heavy use. A 2ft shoulder should be provided on each side of the path, kept clear of vertical elements or obstructions. Wider paths are useful to accommodate maintenance vehicles and through curves to provide more operating space.

## On-Street Bike Facility

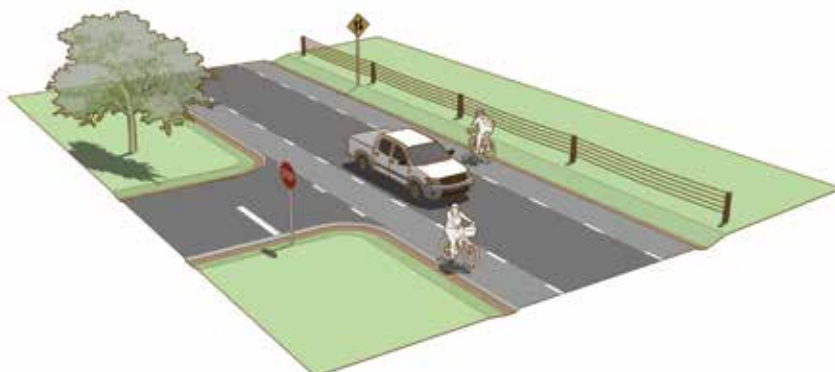
- Class IV - Preferred minimum width of a one-way separated bike lane is 7ft. A vertical separation width of 3ft is preferred and allows for a variety of separation methods.
- STAR Class II shoulder conversion - To accommodate bicyclist and pedestrian use of the shoulder, provide a minimum width of 4ft adjacent to a road edge or curb, exclusive of any buffer or rumble strip
- STAR guide Advisory Shoulders - The advisory shoulder space is a visually distinct area on the edge of the roadway, offering a prioritized space for people to bicycle and walk. The preferred width of an advisory shoulder is 6ft with a 13.5ft to 16ft two-way center travel lane.



*A Class IV Separated Bikeway is located within or directly adjacent to the roadway and is separated from motor vehicle traffic with a vertical element.*



*Paved shoulders on the edge of roadways can be enhanced to serve as a functional space for bicyclists and pedestrians to travel in the absence of other facilities with more separation.*



*Advisory shoulders create usable shoulders for bicyclists on a roadway that is otherwise too narrow to accommodate one.*

## PUBLIC AMENITIES

Trailheads offer an opportunity to provide various public amenities geared toward enhancing user experience. At a minimum a trailhead should feature a shade structure, trail map kiosk, seating, bicycle racks, and horse tie in the case of equestrian trails. Where feasible the following other elements should also be incorporated: water fountain, bathroom, interpretive signage, and public art. Landscaping elements such as shade trees and ornamental planting featuring local, native plants can also be incorporated.



*Roadway adjacent trail with pedestrian lighting and landscaping*



*Picnic area and restrooms*



*Public art incorporated with landscaping, recreational components, and picnic area.*

## MATERIALS

Material choices throughout the Olancha Cartago Corridor should consider durable, light-colored, low-albedo, recycled, or local materials with consideration for glare. Materials create an opportunity to tie into the overall branding scheme for the corridor with materials such as sierra granite, concrete, weathered steel, and volcanic rock that echo the branding color scheme.

### Trail material options:

Multi-use bicycle and pedestrian trails may be surfaced in asphalt concrete paving for a smooth operating surface and durability. Hiking, equestrian, and mountain bike trails can be surfaced with crusher fines from local gravel plant operations or decomposed granite. These natural surface trails can be designed with drainage swales adjacent to promote plant growth alongside the trail. In areas of sensitive habitat or over wetlands, wooden boardwalk trails provide access without the harm of consistent foot traffic.

Different path types can be separated or buffered from one another using bridal trail fences, shrub and tree plantings, or local stone.

Maintained existing dirt roads can also serve as functional multi-use trails. Signage should be installed at the roadway entrance and at intersections to alert trail users and drivers to the presence of one another.



**Buildings/trailhead elements:**

Trailhead structures and elements can be constructed with materials such as concrete, weathered steel, local stone, and wood that tie into the look and feel of local architecture and the corridor branding colors.

**WAYFINDING + SIGNAGE****Gateway Monuments**

Gateways define the entry into a distinct place with a defined identity. They are the first communication and introduction to a physical place, issuing a feeling of arrival. Gateways can be scaled for pedestrian experiences or vehicular experiences.

**Trailhead Kiosks**

Kiosks that include area or regional maps and provide helpful navigational information, especially where users may be stopping long enough to digest more information (e.g., transit stations or stops, busy intersections, trailheads). Kiosks should be located in conspicuous areas along the primary route from parking areas to the trail. Sufficient space should be provided around the kiosk to allow people to observe.

**National Guidance:**

The Manual on Uniform Traffic Control Devices (MUTCD) is a document issued by the Federal Highway Administration of the United States Department of Transportation. The MUTCD specifies the standard for all traffic control devices (including wayfinding signs and pavement markings) installed on any street, highway, bikeway (including paved shared use paths), or private road open to public travel. The MUTCD was established in order to achieve uniformity and consistency in traffic control devices so that information would be readily recognized and understood by travelers. Trail wayfinding and signage elements not compliant or not addressed by the MUTCD may be implemented by local agencies along trails but may be ineligible for federal funding depending on the interpretation by DOT.

Per the MUTCD, signs should be designed so that:

- Legibility and size combine with placement to permit adequate time for response.
- Uniformity, size, legibility, and reasonableness of the message combine to command respect.

The MUTCD also recommends the arrangement and amount of text,



*Granite*



*Concrete*



*Weathered Steel*

also referred to as legend, on each section of each sign:

- Decision signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions.
- Approved fonts include the Federal Series (series B, C, or D), also known as Highway Gothic and Clearview.
- A contrast level of 70% needs to be achieved between foreground (text and graphics) and background.

### **Community Wayfinding Standards**

Wayfinding signs, which allow for an expression of community identity and pride, reflect local values and character, and may provide more information than signs which strictly follow the basic guidance of Part 9 in the MUTCD. Section 2D.50 of the MUTCD describes community wayfinding signs as follows:

- 1. Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other users to key civic, cultural, visitor, and recreational attractions and other destinations within a city or a local urbanized or downtown area.
- 2. Community wayfinding guide signs are a type of destination guide sign with a common color and/or identification enhancement marker for destinations within an overall wayfinding guide sign plan for an area.

### **ACCESSIBILITY STANDARDS**

As wayfinding systems often relate to accessible routes or pedestrian circulation, it is important to consider technical guidance from the ADA in order to implement wayfinding signs and other elements that do not impede travel or create unsafe situations for pedestrians, bicyclists, and/or those with disabilities. The Architectural and Transportation Barriers Compliance Board and the AASHTO Guide for the Development of Bicycle Facilities also provide guidance for safe and accessible design for the built environment.

The following are standards that should be considered when designing and placing wayfinding signs.

#### **Vertical Clearance**

On-Street: Vertical clearance shall be a minimum of 84” when adjacent to a sidewalk or on-street environment.

Off-Street: Vertical clearance shall be 96" high maximum (when overhanging the path), or 48" minimum from the grade of the path to the bottom of the sign and 24" from the edge of the path tread to the edge of the sign when the sign is mounted adjacent to the trail.

**Post-Mounted Objects**

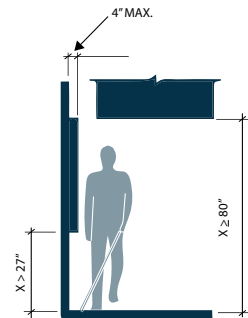
Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12", the lowest edge of such sign or obstruction shall be 27" minimum or 80" maximum above the finish floor or ground.

**Protruding Objects**

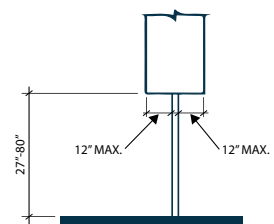
Objects with leading edges more than 27" and not more than 80" above the finish floor or ground shall protrude 4" maximum horizontally into the circulation path.

**Required Clear Width**

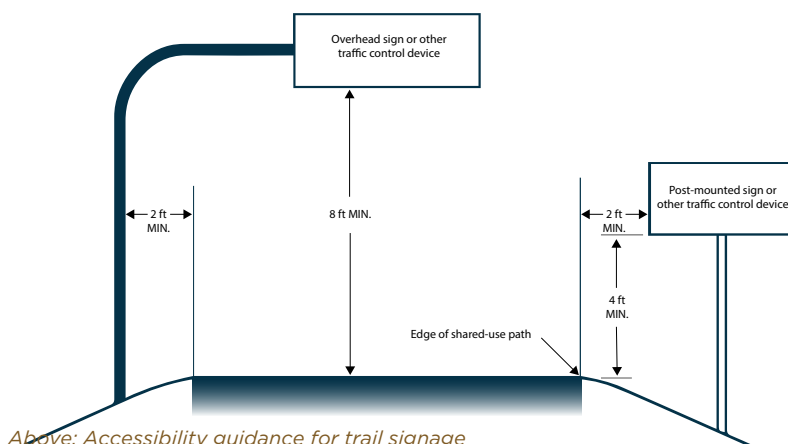
Protruding objects may not, in any case, reduce the clear width required for accessible routes. Generally, this requirement is met by maintaining 4' minimum clear width for people maneuvering mobility devices. This requirement applies to sidewalks and other pedestrian circulation paths.



*Above: Accessibility guidance for protruding objects*



*Above: Accessibility guidance for pole-mounted objects*



*Above: Accessibility guidance for trail signage*

# FUNDING + IMPLEMENTATION





## NEXT STEPS

This document includes high level conceptual recommendations for the corridor. With this initial design completed, the next step in making the projects in this plan a built reality is securing funding for feasibility, detailed design, and construction.

This chapter outlines strategies for implementation including feasibility-level cost estimation, phasing, and funding opportunities.

The planning, design and construction process typically consists of six essential phases: 1) Planning and Concept Design (this document), 2) Feasibility Study, 3) Preliminary Design, 4) Environmental Review and Permitting, 5) Detailed Design (or PS&E), and 6) Construction.

Each step in this process requires funding and public review. Potential sources for funding these phases are described in the following pages.

## OPINION OF PROBABLE COST

Cost estimation relies on a variety of factors that are related to design constraints, property ownership, and local, regional, and state requirements.

### SOFT COSTS:

Soft costs cover a variety of professional services, including:

- Public participation
- CEQA
- Preliminary, semi-final, and final design
- Site survey
- Preparation of construction documents
- Permitting (local, state, and federal, if required)
- Bid assistance
- Construction observation and contract administration

Based upon similar project experience and proposed concept design features, engineering costs are expected to be approximately 10% of the total construction cost. However, the actual cost of these services will vary widely depending on project phasing. To a large extent, the cost of permitting, preparing bid documents, and managing the construction for a single phase are nearly the same as completing these activities for the entire project.

Survey and design are also more cost-effective if done at one time, but funding, public support, and available land to construct projects do not always allow construction of large, corridor-wide projects at once.

### HARD COSTS: CONSTRUCTION

This document presents preliminary estimates of construction costs based upon the conceptual designs described in this study. It does not include the construction costs of any of the trails located outside of the study corridor. Important assumptions used to arrive at these estimates include:

- Proposed plans are conceptual and require additional detailed design
- This feasibility-level cost estimate is derived from previous studies, contractor coordination, and recent indexed construction costs
- Costs do not include property acquisition
- Peripheral roadway intersection improvements are not included

- Standard construction methods and materials are used

In developing these estimates, similar projects were used to select the construction materials with the best life-cycle cost and performance characteristics.

Therefore, aesthetically pleasing materials with a track record of durability and low-maintenance requirements, available at a competitive cost, have been assumed.

## **ESTIMATING DIRECT COSTS TO INYO COUNTY**

The bulk of the funding for the design and construction of this project will come from sources outside of the County so as not to unduly burden its General Fund or Capital Improvements Fund.

Projects identified in this plan will only move forward for design and construction once the County has secured outside funding through grant applications.

Most federal, state, and local grants require a local match from the applicant to cover a percentage of a project's design/construction cost that is distributed over the project. This match percentage varies depending on the funding entity, but is usually between 5-15%. Some grant programs permit in-kind resources (e.g., staff time) to count for the applicant match, while others require a cash match.

The project cut sheets beginning on page 87 provide a range of costs the County can anticipate in order to leverage outside grant funding for design and construction.

It is likely that elements of this plan will be implemented over a series of years so that direct costs supported by the County will be distributed over different fiscal years.

## FUNDING RECOMMENDATIONS

A variety of options exist to further plan, design, and construct active transportation, streetscape, and public space projects. Funding sources exist at federal, state, regional, and local levels. The following funding sources are recommended to support Inyo County's efforts to implement these improvements.

In addition to the competitive grant programs highlighted in the following pages, Inyo County may consider exploring some creative, locally-controlled funding approaches to support some of the art and placemaking elements along the corridor.

Many communities choose to implement a percent-for-art piece of legislation. This encumbers a percentage (usually 0.5 to 2%) of CIP (publicly funded capital improvement projects) per year for the commissioning of public artworks, which will usually be sited in, on, or adjacent to the building or project being constructed. Percent-for-art ordinances guarantee a funding stream for public art projects regardless of what happens to local budgets or arts funding. The policy also guarantees that public art projects will be planned each year, as long as CIPs are underway and municipal construction continues.

Some communities also choose to allocate a percentage of the hotel/bed tax, state lottery revenue, or a percent or fixed fee per ride hailing trip taken to support particular funds. This may include active transportation projects as well as public art.

Opportunities for public art could be nurtured as part of the ongoing, existing local programs. The County could partner with local artists/arts organizations in installing art exhibits in vacant storefronts to improve buildings' and the corridor's perceived image.

### FEDERAL

#### **Recreation Economy for Rural Communities, Environmental Protection Agency (EPA)**

Recreation Economy for Rural Communities is a planning assistance program to help communities develop strategies and an action plan to revitalize their Main Streets through outdoor recreation. The program emphasizes activities that can foster environmentally friendly community development and Main Street revitalization through conservation and sustainable use of natural resources.

This program is not a grant program, but provides specific planning assistance to foster the development of a recreation-based economy. More information is available here: <https://www.epa.gov/smartgrowth/recreation-economy-rural-communities>



### **National Endowment for the Arts (NEA) - Our Town Grants**

NEA provides a limited number of planning and design grants, ranging from \$25,000 to \$200,000, for creative and innovative projects in which communities improve their quality of life, encourage greater creative activity, foster stronger community identity and a sense of place, and revitalize economic development.

More information: <https://www.arts.gov/grants-organizations/our-town/place-based-projects-grant-program-description>

### **National Endowment for the Arts (NEA) - Art Works Grants**

NEA provides grants for organizations that support exemplary projects in artist communities, arts education, dance, design, folk and traditional arts, literature, local arts agencies, media arts, museums, music, musical theater, opera, presenting and multidisciplinary works, theater, and visuals arts. Funding goes toward projects only. These grants support artistically excellent projects that celebrate creativity and cultural heritage, invite mutual respect for differing beliefs and values, and enrich humanity. Matching grants generally range from \$10,000 to \$100,000. A minimum cost share/match equal to the grant amount is required. More information: <https://www.arts.gov/grants/apply-grant/grants-organizations>

There is also assistance available to artist communities for projects that encourage and nurture the development of individual artists and foster and inspire their creative processes. NEA defines an artist community as an organization, whether focused on a single discipline or multidisciplinary, whose primary mission is to provide artist residencies.

### **Rivers, Trails, and Conservation Assistance (RTCA) Program, National Park Service (NPS)**

RTCA, a community assistance arm of the NPS, provides technical assistance to a variety of agencies and organizations in order to preserve open space and develop trails. RTCA's funds can be used for developing plans, engaging the public, and identifying other sources of funding for conservation and outdoor recreation projects. Applications are due annually by June 30th.

### **Highway Safety Improvement Program (HSIP)**

HSIP is a data-driven funding program for construction-related projects with a goal of reducing traffic fatalities and serious injuries on all public roads. Agencies must identify eligible projects through crash analyses. Agencies can use HSIP funds for both infrastructure and non-infrastructure projects, including bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects and crossing treatments in school zones. In California, all HSIP projects must be consistent with the California Strategic Highway Safety Plan.

### **USDA Rural Business Development Grants**

Designed to support rural communities in developing or expanding small and emerging private business in rural areas with fewer than 50 employees and less than \$1 million in gross revenues. Grants generally range from \$10,000 - \$500,000 and may be used for community economic development, feasibility studies and business plans, rural business incubators, and long-term business strategic planning. Several projects featured in the “Rural Prosperity Through the Arts & Creative Sector” report published by the National Governor’s Association have received funding through this grant program.

### **USDA Community Facilities Direct Loan & Grant Program**

This program offers both loans and grants to assist development of essential community facilities in rural areas, including street improvements and community gardens. It is available to low-income communities with a median household income below 80% of the state average.

### **Recreational Trails Program (RTP)**

Administered by the California Department of Parks and Recreation (CDPR), RTP provides federal funds annually to all levels of government for recreational trails and trails-related projects in California. Applicants must match at least 12% of the total project cost.

## **STATE**

### **Proposition 84 Grant Program**

The Proposition 84 Grant Program provides funding for public agencies and nonprofit organizations to acquire, develop, rehabilitate, restore, and protect land and water resources consistent with Proposition 84. This includes trail and open space planning and construction.

### **Affordable Housing and Sustainable Communities (AHSC) Program, California Strategic Growth Council**

The “Rural Innovation Project Area” project type refers specifically to transit/sustainable transportation improvements in rural areas. The California Strategic Growth Council’s AHSC Program provides funding for compact transit-oriented development and related infrastructure and programs that reduce greenhouse gas (GHG) emissions. These projects increase the accessibility of housing, employment centers, and key destinations via low-carbon transportation options such as walking, biking, and transit.

### **Artists in Communities**

The Artists in Communities (AC) grant program centralizes artists and their artistic processes as vehicles for community vitality. AC grants support sustained artistic residencies in community

settings. Artists must work closely with organizational partners and community members to produce creative projects that are relevant and responsive to their community. An applicant must be a California-based nonprofit arts organization, unit of government, or a social service/community nonprofit organization. Libraries, housing agencies, senior centers, cultural centers, or hospitals may be eligible. More information: <http://www.arts.ca.gov/programs/ac.php>

### **Recreational Trails and Greenways Grant Program**

The California Natural Resources Agency provides funding for non-motorized infrastructure development and enhancements that promote new or alternate access to parks, waterways, outdoor recreational pursuits, and forested or other natural environments to encourage health-related active transportation and opportunities for Californians to reconnect with nature. It is the intent of the people of California that projects funded by Proposition 68, including the Recreational Trails and Greenways Grant Program, result in public benefits addressing the most critical statewide needs and priorities for public funding. More information: <http://resources.ca.gov/grants/trails/>

### **ATP**

The California State Legislature has consolidated a number of programs centered on active transportation into a single program. The resulting Active Transportation Program (ATP) encompasses the federally funded programs (MAP-21 and FAST Act), Bicycle Transportation Account, the Safe Routes to Schools Program, and the Recreational Trails Program.

In September 2016, Assembly Bill 1613 appropriated a one-time investment of \$10 million from the Greenhouse Gas Reduction Fund for the ATP. In April of 2017, Senate Bill 1 (SB1), the Road Repair and Accountability Act of 2017, significantly increased the State's investment in active transportation by adding another \$100M annually to the ATP, bringing the total annual funding to approximately \$220M. Ten percent of ATP funds are reserved for rural communities. The California Transportation Commission writes guidelines and allocates funds for the ATP, while the ATP will be administered by the Caltrans Division of Local Assistance. Goals of the ATP are currently defined as the following: Increasing the proportion of trips accomplished by biking and walking; Increasing safety and mobility for active transportation users; Advancing active transportation efforts of regional agencies to achieve the greenhouse gas reduction goals; Enhancing public health; Ensuring that disadvantaged communities fully share in the benefit of the program; and, Providing a broad spectrum of projects to benefit many types of active transportation users. More information: [www.dot.ca.gov/hq/LocalPrograms/atp/index.html](http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html)

### **Sustainable Communities Planning Grant and Incentives (SCPGI) Program, California Strategic Growth Council**

The SCPGI program provides grants for development and implementation of plans that have a variety of environmental, economic, and social benefits. Examples of plans include trail planning.

### **SB1**

California's state-maintained transportation infrastructure will receive roughly half of SB 1 revenue. The other half will go to local roads, transit agencies, and an expansion of the state's growing network of pedestrian and cycle routes. Each year, this new funding will be used to tackle deferred maintenance needs both on the state highway system and the local road system. A portion will go to cities, counties, and regional transportation agencies to build or convert more bike paths, crosswalks, and sidewalks. SB1 significantly increases funding for these projects through the Active Transportation Program (ATP).

### **Habitat Conservation Fund**

Administered by the California Department of Parks and Recreation, the Habitat Conservation Fund provides funding through state general funds to local agencies to protect threatened species, address wildlife corridors, create trails, and provide nature interpretation programs which bring urban residents into park and wildlife areas.

### **California Cultural Districts Program**

The California Arts Council recently launched a new program to establish Cultural Arts Districts throughout the state. Recipients receive official state designation as a cultural district for a 5-year period, branding materials and templates, technical assistance, marketing support from state tourism partners, and a \$5,000 annual stipend. The next call for applications is anticipated in 2019, however no date has been established.

## **LOCAL**

### **Public Art Funding - One-percent-for-art sources**

Non-percent-for-art-funded programs may include: Allocating a percentage of the hotel/bed tax for art, state lottery revenue, parking meter revenue, taxing large scale events and festivals, etc.

### **Public Art Funding - Percent-for-art registration**

Passing percent-for-art legislation encumbers a percentage (usually 0.5 to 2) of CIP (publicly funded capital improvement projects) per year for the commissioning of public artworks, which will usually be sited in, on, or adjacent to the building or project being constructed. Percent-for-art ordinances guarantee a funding stream for public art projects regardless of what happens to city budgets or arts funding. The policy also guarantees that public art projects will be planned each year, as long as CIPs are underway and municipal construction continues.

## PARTNERSHIPS

Partnerships with local organizations, artists, and agencies will be a crucial component to continuing to develop the area's identify and bring projects through the implementation process.

### **Inyo County**

As the agency responsible for guiding the vision of this Study, and the jurisdictional owner of the area, Inyo County will likely lead future efforts to secure funding for projects that would enhance the study area's recreational resources and cultural and aesthetic character.

### **Lone Pine Chamber of Commerce**

Lone Pine Chamber of Commerce plays a significant role in building local community and attracting visitors to the Lone Pine area, and its influence can extend into Olancho and Cartago as well. The Chamber curates and hosts local events and offers resources for businesses, residents, and visitors alike.

### **California Department of Fish & Wildlife**

California Department of Fish & Wildlife is a state agency responsible for managing and protecting California's fish, wildlife, and plant resources and habitats, including The Cartago Wildlife Area. The agency manages grant programs that "sustain, restore, and enhance California's fish, wildlife, plants, and their habitats." The department may be available to contribute to future interpretive opportunities and visitor information, and will need to be consulted on projects that may encroach into sensitive habitat areas.

### **California Department of Transportation (Caltrans)**

Caltrans manages the state's highways, freeways, and inter-city rail services. The agency manages the Active Transportation Program (ATP) and Sustainable Transportation Planning Grant Program, two programs that serve as significant sources of funding for active transportation projects in California. Projects within the study area that are south of Highway 190 will be in Caltrans jurisdiction, and subject to review and approval by the department.

### **United States Bureau of Land Management (BLM)**

BLM manages the nation's public lands with a mission to "sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations." In California, BLM oversees approximately 15 million acres of public lands, including much of the land surrounding the study area. The agency offers grant assistance for projects that meet its mission.

**Crystal Geysler**

The Crystal Geysler Alpine Spring Water bottling plant is a major employer in the study area. As a large business located between Olancha and Cartago, the company can play a role in the corridor's transformation, and potential trails and other public amenities could be located on the company's property within the area.

**Los Angeles Department of Water and Power (LADWP)**

LADWP manages natural resources and lands throughout the study area, securing water for Los Angeles while allowing for recreation, riparian habitat, wildlife, and agricultural activities. As the largest private landowner in the Owens Valley watershed, LADWP offers resources on recreational opportunities in the area and can help shape the development of new resources for residents and visitors. LADWP has built a series of trails and art installations surrounding Owens Lake, which could be expanded into the study area. Nearby Haiwee Reservoir, owned by LADWP, closed to recreation in 2001 but would be a significant recreational draw to the area should it reopen.

**Olancha Cartago Arts Working Group**

There is potential to create an Olancha Cartago Arts Working group as a partnership between Inyo County and local artists and arts organizations. The working group can focus on securing grant money for projects that will develop the southern portion of the study area (190 Junction & south) as an artistic hub. The group can plan for and design art works, displays, sculptures, and projects that draw artists and art aficionados to the area.

**Inyo Council for the Arts (ICA)**

ICA serves as the county's partner to the California Arts Council and acts as an advocate and resource for local artists and community members. ICA also helps to organize artistic and cultural events in the area.

**Great Basin Unified Air Pollution Control District (GBUAPCD)**

GBUAPCD enforces federal, state, and local air quality regulations in the study area and ensures that air quality standards are met. The agency also oversees the development of air quality plans for the area.

**Olancha RV Park/Olancha Cafe**

The Olancha RV Park and Motel and the Olancha Cafe are local businesses that would benefit from an increase in visitors to the area. The land surrounding these businesses can provide additional recreational opportunities away from the highway ROW.

**Owens Valley Committee**

The Owens Valley Committee is a local nonprofit focused on protecting open space and water resources in the Owens Valley. Their advocacy work brings together community members to protect and enhance the natural resources of the area.

**Center for Land Use Interpretation**

Headquartered in Los Angeles, the Center for Land Use Interpretation organizes exhibits and programs on land use issues throughout the United States. Their programs focus on human interactions with the natural environment, heightening the public's understanding of these contemporary landscapes. The study area offers an array of material and imagery that could be curated to highlight the unique aesthetics of the Owens Valley.

**Metabolic Studio**

The Metabolic Studio operates from Los Angeles and has a history of work in the Owens Valley, including a storefront and community garden in Lone Pine, projects at the PPG glass plant at Owens Lake, as well as billboards and signage throughout the valley. Their history of work in the area, combined with their experience working closely with local communities, will make them a valuable partner in future arts development.

## PHASING RECOMMENDATIONS

### TIER 1 PROJECTS

As the County cannot directly establish businesses along the corridor, the first priority in phasing improvements will be to begin with what the County can create: safety improvements along the roadway and adjacent new trails. These elements are fundable through the transportation funding programs outlined above, and should require little capital outlay on the County's part. Maintenance of these facilities would be an ongoing responsibility of the County, and this maintenance should be earmarked in the county general fund, transportation, and parks and recreation funds prior to construction.

### TIER 2 PROJECTS

Second-tier improvements include public spaces on property within county jurisdiction and public right-of-way. These include rest areas, interpretive exhibits, and spaces for public art. These elements are key because they will help provide the draw that bring people to the area and can help support existing and future businesses. Public spaces and art funding sources are generally not allowable in transportation-specific funding, but they are eligible for dedicated parks, open space, and arts funding.

### TIER 3 PROJECTS

Third-tier improvements are generally either beyond the immediate scope of the county, or are policy-level improvements. These include the development of business incentives, negotiation with adjacent agencies for public access to areas currently closed, and coordination with local businesses and chambers of commerce to create a unified approach to the look and feel of the corridor, as well as the types of services offered along its length.



## PRIORITY PROJECTS

The following pages detail six priority projects identified as short-term, implementable, and community-supported initiatives. Each project includes cost estimates, a list of ideal funding sources, anticipated project partners and coordination, and conceptual cross sections for transportation improvements. The projects are presented from north to south, and the final decision on which projects to pursue sooner than later will ultimately be the decision of the County. The two areas most likely to generate increased activity in the short term are the junction at Highway 190 and the Cartago Wildlife Area in the north. Public art is viable throughout the corridor, but the southernmost stretch has been identified as the most ideal location. The County can begin discussions with Caltrans and the pursuit of art funding before the highway realignment takes place.

# CARTAGO AMENITIES

See pages 56-57 for additional detail

## OVERVIEW

The 'Cartago Amenities' potential project includes gateway signage and branding, a potential trailhead, visitor center, and pedestrian safety and crossing improvements. The visitor center would ideally re-use an existing structure, and could be established through partnerships with state and federal agencies. Cost is dependent on the level of agency buy-in and level of amenities present at the center.

## PRIORITY FUNDING SOURCES

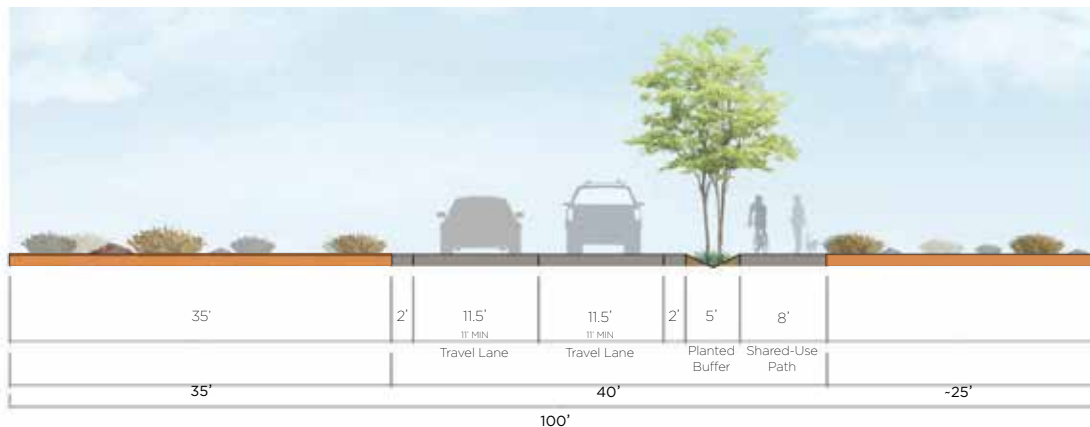
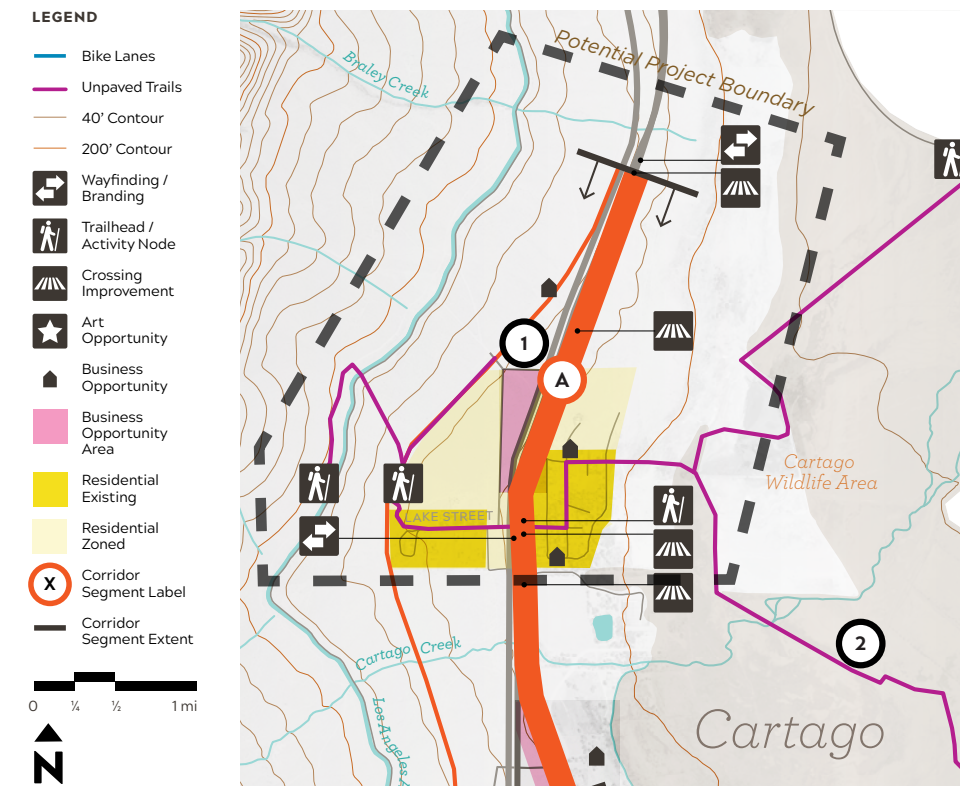
A combination of Economic Revitalization and Active Transportation funding is appropriate for this collection of projects.

- NEA Our Town
- USDA Rural Business Development Grants
- Caltrans ATP
- HSIP

## PARTNERS

- Inyo County
- Lone Pine Chamber of Commerce
- California Department of Fish & Wildlife
- Caltrans

ITEM	QTY	COST	TOTAL
Trailhead	1	\$50k	\$50k
Gateway	1	\$7-10k	\$7-10k
RRFB	4	\$5k - \$20k	\$20k - \$80k
X-Walk	4	\$1k	\$4k
Wayfinding	1	\$600	\$600
Site Prep	1	\$10k	\$10k
P, S, & E	1	\$20k	\$20k
<b>Total</b>			\$115-175k



# CARTAGO LOOP TRAIL

See page 56-57 for additional detail

## OVERVIEW

The Cartago Loop Trail is a natural-surface, multi-use trail that connects users with Cartago, Owens Lake, and Cartago Wildlife Refuge. There is potential to also connect to the Dirty Socks Trail and hot springs to the east.

## FUNDING

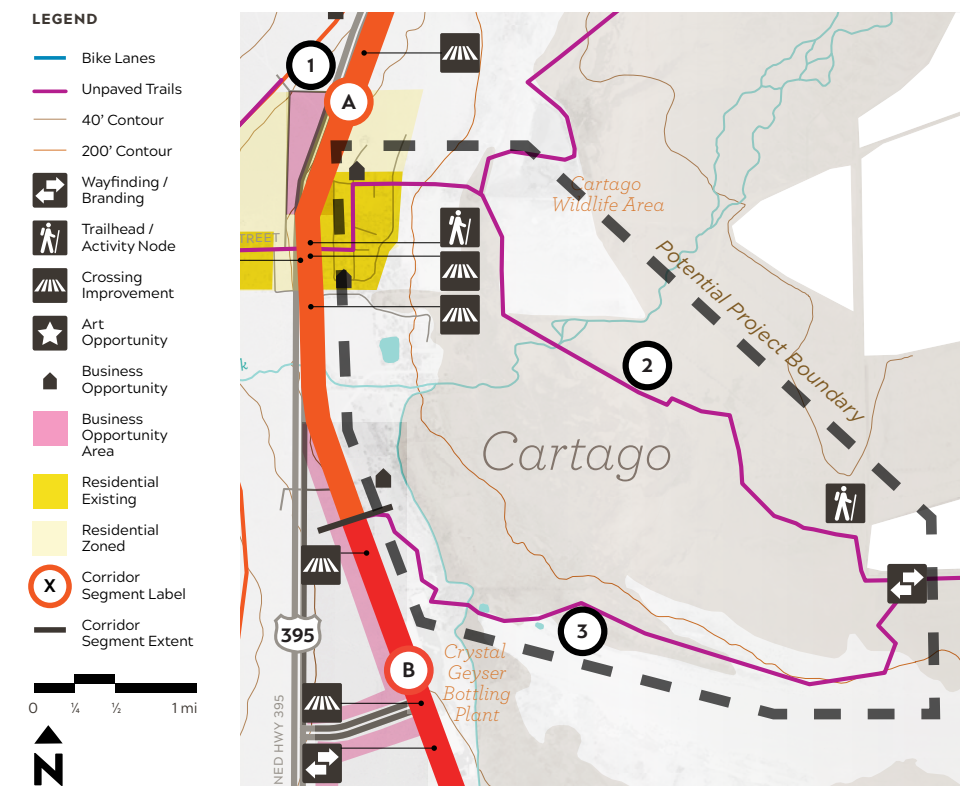
Recreational trail-focused funding sources are the best fit for this project. The proximity to the Cartago Wildlife Area may make it competitive for federal sources and for sources focused on sensitive watersheds.

## PARTNERS

- California Department of Fish and Game
- Unites States Bureau of Land Management
- Crystal Geysers

- Rivers, Trails, and Conservation Assistance Programs (RTCA)
- Proposition 84
- SB1
- RTP

ITEM	QTY	COST	TOTAL
Trail	~4 mi	\$40/lf	\$845k
Trailhead	1	\$50k	\$50k
Wayfinding	1	\$600	\$600
Site Prep	1	\$10k	\$10k
P, S, & E	1	\$115k	\$115k
Other	1	\$30k	\$30k
<b>Total</b>			<b>\$1.1m</b>



# PATH & TRAIL: NORTHERN GATEWAY TO 190

See Page 54 for additional details

## OVERVIEW

This project imagines a Class I shared-use path constructed within the existing roadway along the eastern edge. Travel lanes would be narrowed and re-striped to accommodate a landscape buffer and path. A multi-use natural surface trail that accommodates equestrians is also an additional option where space permits within the right-of-way.

## FUNDING

Active Transportation-focused funding sources are the best fit for this project, however if the equestrian trail component is added that will open up funding from recreational trail sources.

- Caltrans ATP
- HSIP

## PARTNERS

- Inyo County
- Caltrans

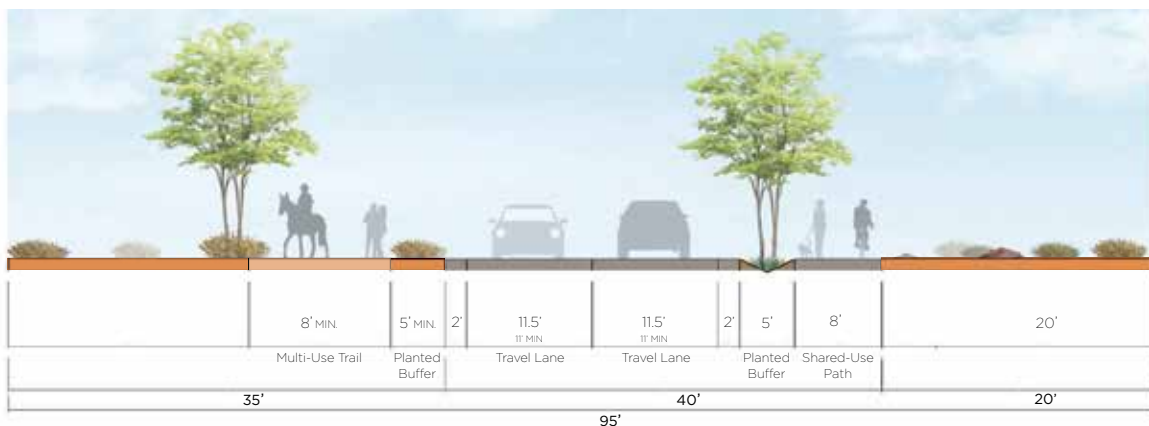
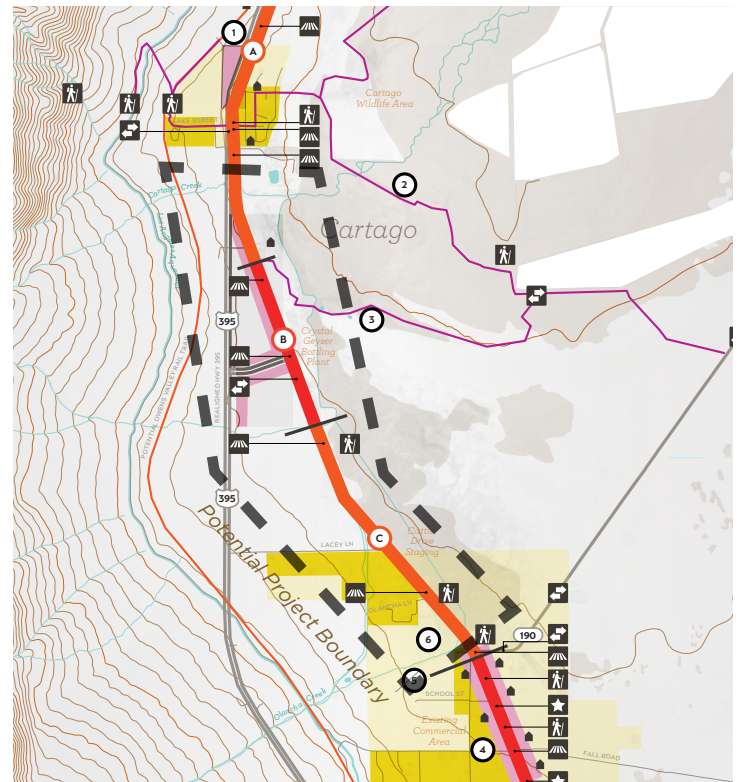
ITEM	QTY	COST	TOTAL
Path	~4 mi	\$7/sf	\$780k
Trail	~4 mi	\$12/lf	\$260k
Signage & Striping	~4 mi	\$4/lf	\$86k
RRFB	4	\$5 - 20k	\$20- \$40k
X-Walk	4	\$1k	\$4k
Site Prep	1	\$10k	\$10k
Landscaping	1	\$660k	\$660k
P, S, & E	1	\$195k	\$195k
Other	1	\$30k	\$30k
<b>Total</b>			<b>\$2-2.1m</b>

**LEGEND**

- Bike Lanes
- Unpaved Trails
- 40' Contour
- 200' Contour
- Wayfinding / Branding
- Trailhead / Activity Node
- Crossing Improvement
- Art Opportunity
- Business Opportunity
- Business Opportunity Area
- Residential Existing
- Residential Zoned
- Corridor Segment Label
- Corridor Segment Extent

0 1/4 1/2 1 mi

N



# 190 JUNCTION AMENITIES

See Pages 58-63 for additional details

## OVERVIEW

The '190 Junction Amenities' potential project includes gateway signage and branding, a potential trailhead, pedestrian safety and crossing improvements, a potential pocket park, and opportunities for art installations.

## FUNDING

A combination of Economic Revitalization and Active Transportation funding is appropriate for this collection of projects.

- NEA Our Town
- USDA Rural Business Development Grants
- Caltrans ATP
- HSIP

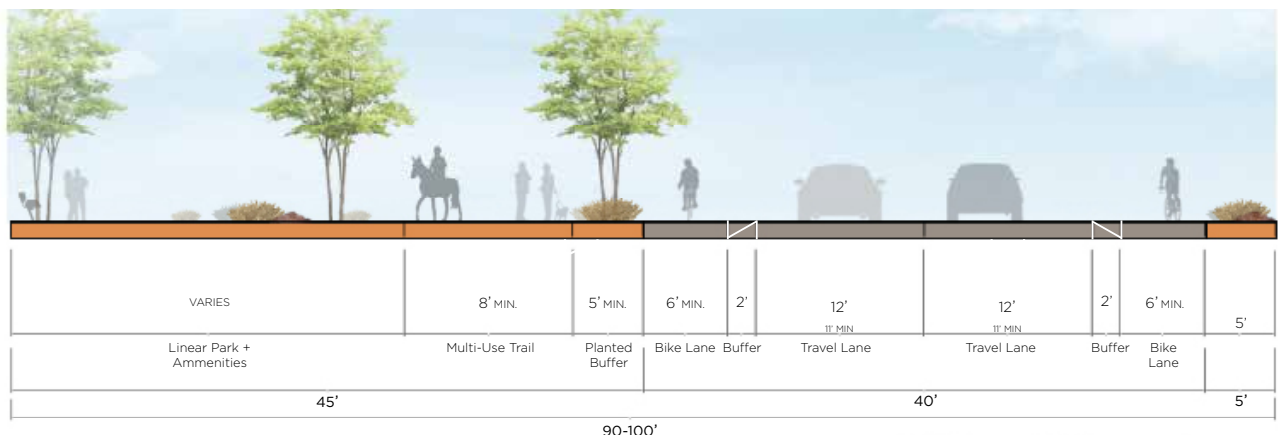
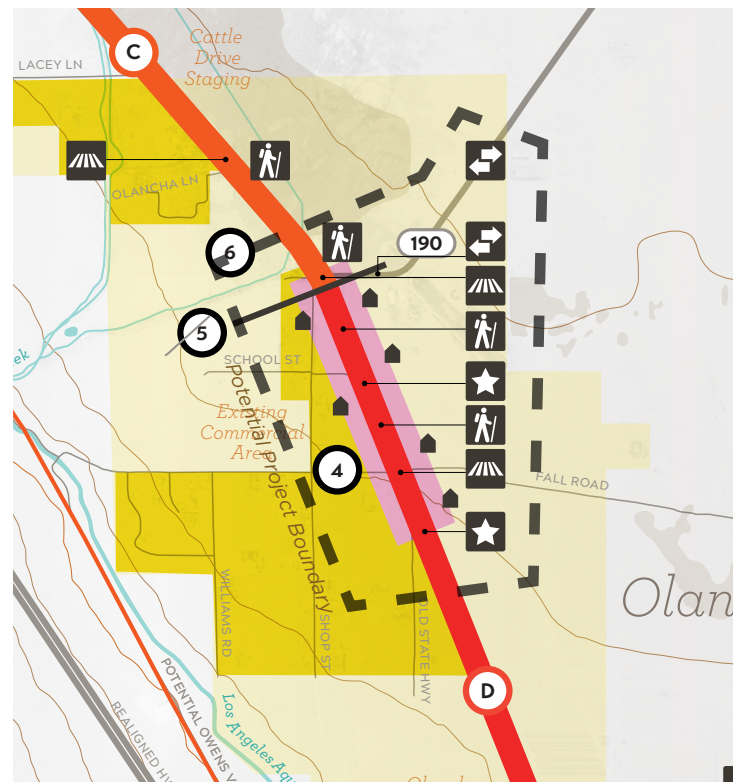
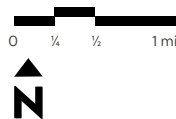
## PARTNERS

- Inyo County
- Caltrans
- Lone Pine Chamber of Commerce

ITEM	QTY	COST	TOTAL
Gateway	1	\$7-10k	\$7-10k
Trailhead	1	\$50k	\$50k
Pocket Park	1	\$645k	\$645k
RRFB	2	\$5-20k	\$10-40k
X-Walk	2	\$1k	\$2k
Site Prep	1	\$10k	\$10k
P, S, & E	1	\$90k	\$90k
Other	1	\$30k	\$30k
<b>Total</b>			<b>\$850-900k</b>

### LEGEND

- On-Street Bike
- 40' Contour
- 200' Contour
- Wayfinding / Branding
- Trailhead / Activity Node
- Crossing Improvement
- Art Opportunity
- Business Opportunity
- Business Opportunity Area
- Residential Existing
- Residential Zoned
- Corridor Segment Label
- Corridor Segment Extent



# MULTI-USE TRAIL: 190 TO HAIWEE

See Pages 60-64 for additional details

## OVERVIEW

The 'Multi-use Trail' potential project is a multi-use natural surface trail that would accommodate pedestrians and equestrians and connect them to Haiwee Trail. It would be located adjacent to the new Caltrans Highway 190. Buffered Class II bike lanes would be added in the shoulder area on both sides of the highway.

## FUNDING

Active Transportation-focused funding sources are the best fit for this project, as well as funding from recreational trail sources.

- Caltrans ATP
- HSIP
- RTP

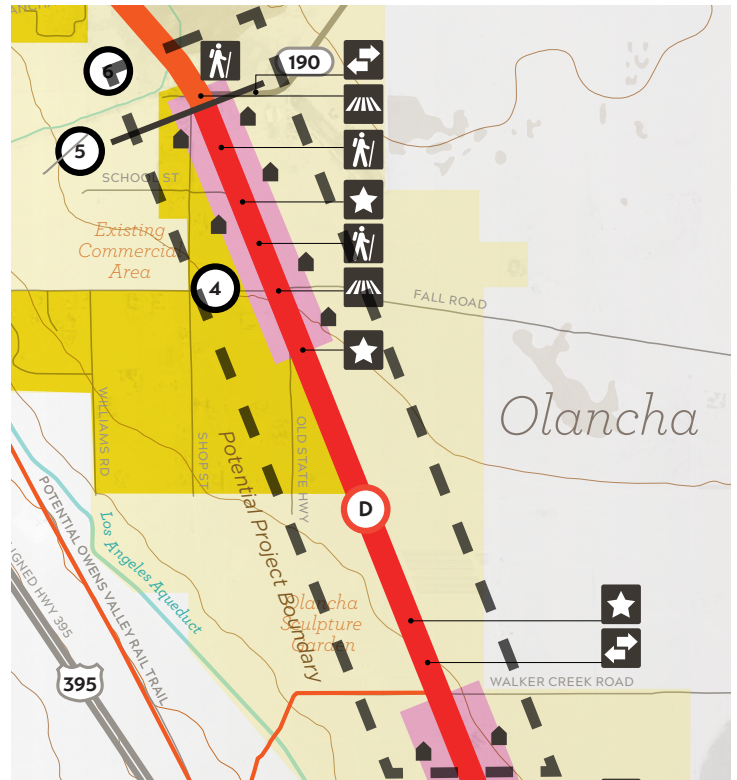
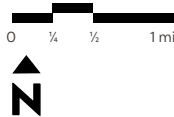
## PARTNERS

- Caltrans
- LADWP

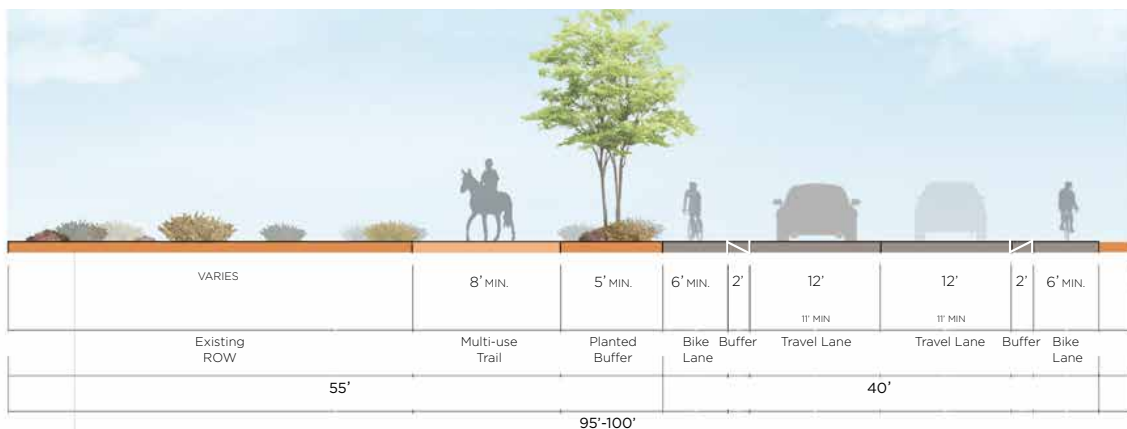
ITEM	QTY	COST	TOTAL
Trail	~3.3 mi.	\$12/lf	\$210K
Bike Lanes	~3.3 mi.	\$32K/mi.	\$110K
Landscaping	1	\$440k	\$440k
Site Prep	1	\$10k	\$10k
P, S, & E	1	\$90k	\$90k
Other	1	\$30k	\$30k
<b>Total</b>			<b>\$900k</b>

### LEGEND

- On-Street Bike
- 40' Contour
- 200' Contour
- Wayfinding / Branding
- Trailhead / Activity Node
- Crossing Improvement
- Art Opportunity
- Business Opportunity
- Business Opportunity Area
- Residential Existing
- Residential Zoned
- Corridor Segment Label
- Corridor Segment Extent



Project continues south to Haiwee Trail



# SOUTHERN SEGMENT: ART AND AMENITIES

See Page 64-66 for additional details

## OVERVIEW

This potential suite of projects presents an opportunity for corridor wayfinding and branding while adding art installations, pedestrian safety and crossing improvements, and potential business re-development.

## FUNDING

A combination of Economic Revitalization and Active Transportation/Trail funding is appropriate for this collection of projects.

- NEA Our Town
- USDA Rural Business Development Grants
- Caltrans ATP
- HSIP
- RTP

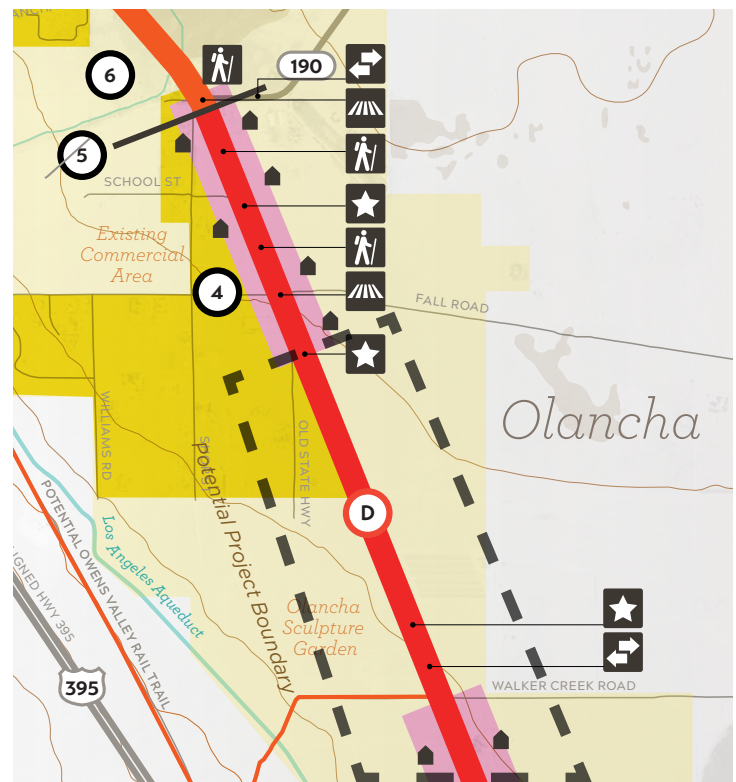
## PARTNERS

- Caltrans
- Lone Pine Chamber of Commerce

ITEM	QTY	COST	TOTAL
RRFB	2	\$5k - \$20k	\$10k - \$40k
X-walk	2	\$1,000	\$2,000
Wayfinding/ Gateway	1	\$20k - \$80k	\$20k - \$80k
P, S, & E	1	\$9k	\$9k
Other	1	\$30k	\$30k
<b>Total</b>			\$75-160k

### LEGEND

- On-Street Bike
- 40' Contour
- 200' Contour
- ↔ Wayfinding / Branding
- 🚶 Trailhead / Activity Node
- 🚧 Crossing Improvement
- ★ Art Opportunity
- 🏠 Business Opportunity
- 🏡 Business Opportunity Area
- 🏠 Residential Existing
- 🏡 Residential Zoned
- ⓧ Corridor Segment Label
- Corridor Segment Extent



Project continues south to end of study area

# APPENDIX





# EXISTING CONDITIONS

## CONTEXT

### Geography

About three million years ago, the Sierra Nevada Fault and the White Mountains Fault systems became active. Repeated episodes of slip earthquakes gradually produced the impressive escarpments of the eastern Sierra Nevada and White Mountains, which together bound the northern Owens Valley-Mono Basin region.<sup>1</sup>

At one time, Owens Lake was up to 12 miles (19 km) long and 8 miles (13 km) wide, covering an area of up to 108 square miles (280 km<sup>2</sup>). In the last few hundred years the lake had an average depth of 23 to 50 feet (7.0 to 15.2 m), and sometimes overflowed to the south after which the water would flow into the Mojave Desert. In 1905, the lake's water was thought to be "excessively saline."

### Settlement History

The Owens Valley was originally inhabited by the Owens Valley Paiute, who referred to themselves as Numu, or "people." It was not until the mid-nineteenth century that the area was settled by non-native peoples.

Olancha was established by Minnard Farley, who came to the area in 1860 and discovered silver ore in the nearby Coso Range. The name "Olancha" is believed to be derived from the nearby Yaudanche tribe. For processing the ore, he built a stamp mill just south of Olancha Creek. The remains of a stone wall from this mill still exists and has been designated as a California Historical Site (marker #796). The first post office at Olancha opened in 1870.

Located near the now abandoned settlement of Carthage, Cartago took its name from the Spanish name for ancient Carthage. The first post office at Cartago opened in 1918. During the heyday of mining in the area (the 1870s), Cartago was a steamboat port for shipment of wood and ore.<sup>2</sup>

After mining died down, Olancha remained an agricultural center. Many ranches raised livestock and produce, watered by abundant

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<sup>1</sup> Hyndman (2000). *Roadside Geology of Northern and Central California*. Missoula: Mountain Press Publishing Company

<sup>2</sup> Durham, David L. (1998). *California's Geographic Names: A Gazetteer of Historic and Modern Names of the State*. Clovis, Calif.: Word Dancer Press. p. 1152.

streams and springs. In 1910, the Southern Pacific Railroad opened up additional access to Olancha with their Owens Valley Branch line. Coined the “Jawbone,” the railroad transported the construction materials used for building the Los Angeles Aqueduct.<sup>3</sup>

### Property Ownership

The majority of the land in the Eastern Sierra is publicly owned (96% in Inyo County and 94% in Mono County). Though most of the private land is centered around the U.S. 395 corridor, no significant growth or development is anticipated within these rural communities. Both the Inyo County<sup>4</sup> and Mono County<sup>5</sup> General Plans detail that any new growth will be concentrated within and contiguous to existing communities. 96% of the land adjacent to U.S. 395 is designated for Agriculture, Resource Management, and Open Space with the remainder designated for Residential and various Commercial and Industrial land uses (see Land Ownership Map).

#### *LADWP*

LADWP owns a substantial portion of land in the Owens Valley. These lands offer a broad array of recreational opportunities as well as grazing by local ranchers. Much of the central portion of the valley is controlled by LADWP who in turn provides grazing leases to tenant ranchers.

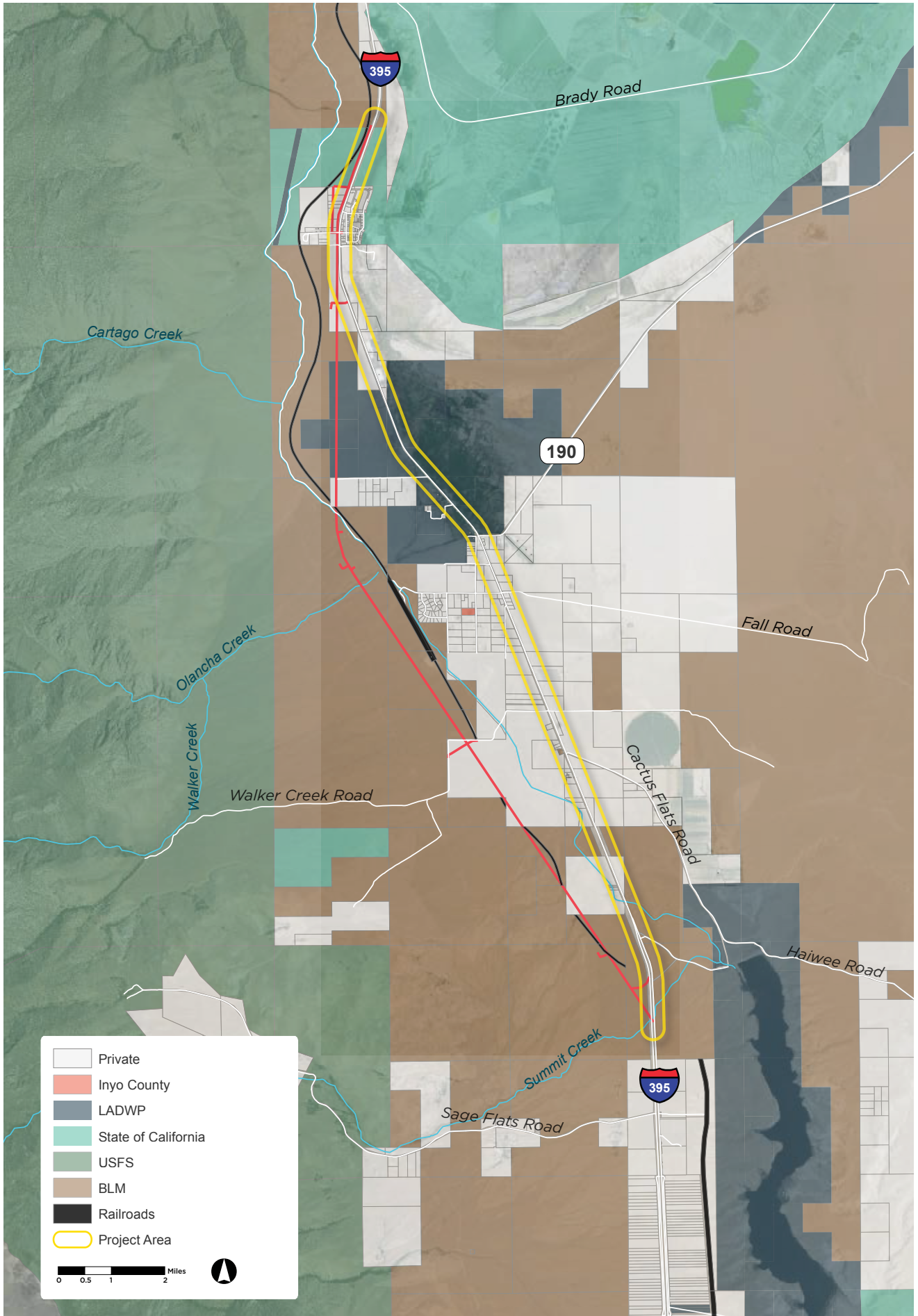
#### *Public*

Large portions of the land surrounding the study area are owned by public agency. Just beyond the more developed areas along the 395 corridor the Bureau of Land Management owns large swaths of land to both the east and the west. Further to the west, federal land managed by the US Forest Service extends far west into the Sierra Nevada mountains. Additionally, a great deal of land is held by the State who controls most of the interior portions of the Owens Lake just to the northeast of the study area. Inyo County also holds some small parcels adjacent to the existing highway.

<sup>3</sup> <http://www.ghosttowns.com/states/ca/olancha.html>

<sup>4</sup> [http://inyoplanning.org/general\\_plan/index.htm](http://inyoplanning.org/general_plan/index.htm)

<sup>5</sup> <https://monocounty.ca.gov/planning/page/general-plan>



*Private*

Within both Olancha and Cartago the majority of land adjacent to the study area is privately owned. These properties are mostly undeveloped with some residential and some ranching occurring in areas closest to the existing highway.

*Rail*

Though there are no active rail lines through the Owens Valley, Southern Pacific still maintains ownership of a rail right of way just to the west of the study area. It does not have a continuous right of way with some gaps existing at private parcels.

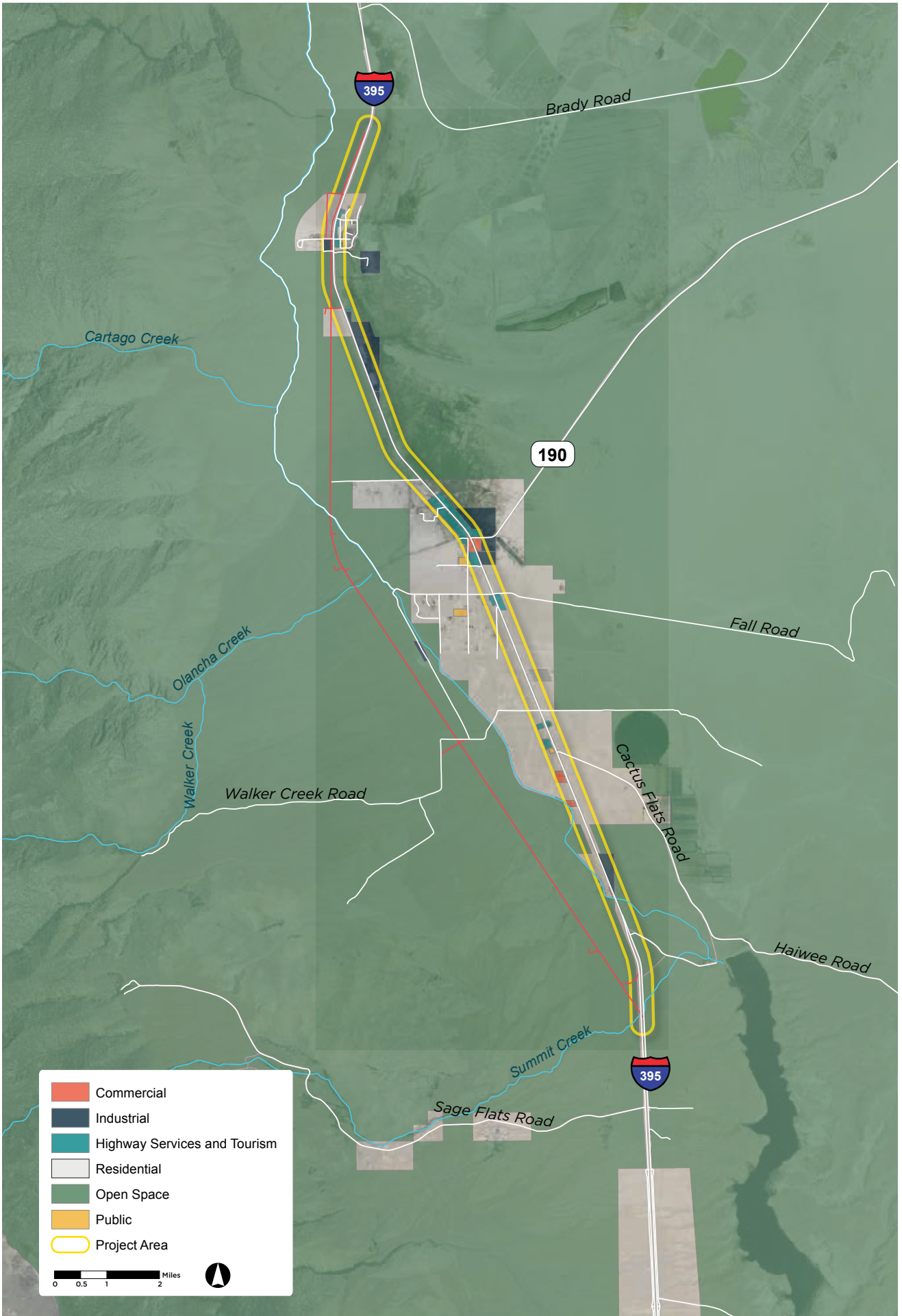
**Zoning**

The Inyo County Zoning Code provides detailed information on the county's permits, zoning definitions, and zone districts (see Zoning Map). The following information pertains to the towns of Cartago and Olancha.

The Cartago diagram displayed in the zoning maps is within the Military Operations Overlay. Along U.S. Highway 395, Cartago has light industrial areas (M2), one-family residential homes (R1), single residence and mobile home combined (RMH), multiple family residential (R3), highway services and tourist commercial zones (C2), and a rural residential zone district (RR).

The Olancha diagram also displayed in the zoning maps is within the Military Operations Overlay (Diagram 20). Along U.S. Highway 395, Olancha has fewer one family residential homes (R1) than Cartago and has more rural residential zone districts (RR). In addition, the area has general industrial and extractive (M1) and light industrial zones (M2). It also includes some highway services and tourist commercial zones (C2), commercial recreation areas (C5), and general commercial retail districts (C1) with some public (P) areas as well.

Both neighborhoods are near the LA Aqueduct and several plots have been identified as open space with a forty-acre minimum (OS-40) outside their neighborhood lines.



## Demographics

### *Olancha*

The 2010 United States Census reported that Olancha had a population of 192. The population density was 24.4 people per square mile (9.4/km<sup>2</sup>). The racial makeup of Olancha was 133 (69.3%) White, 0 (0.0%) African American, 4 (2.1%) Native American, 8 (4.2%) Asian, 0 (0.0%) Pacific Islander, 38 (19.8%) from other races, and 9 (4.7%) from two or more races. There were 47 people who identified as Hispanic or Latino of any race (24.5%).

According to the U.S. Census, all 192 residents of Olancha lived in households, and none lived in non-institutionalized group quarters or were institutionalized.

There were 78 households, out of which 23 (29.5%) had children under the age of 18 living in them, 44 (56.4%) were opposite-sex married couples living together, 1 (1.3%) had a female householder with no husband present, 5 (6.4%) had a male householder with no wife present. There were 7 (9.0%) unmarried opposite-sex partnerships, and 0 (0%) same-sex married couples or partnerships. Twenty-two households (28.2%) were made up of individuals and 6 (7.7%) had someone living alone who was 65 years of age or older. The average household size was 2.46. There were 50 families (64.1% of all households); the average family size was 3.10.

The population was spread out with 44 people (22.9%) under the age of 18, 9 people (4.7%) aged 18 to 24, 37 people (19.3%) aged 25 to 44, 69 people (35.9%) aged 45 to 64, and 33 people (17.2%) who were 65 years of age or older. The median age was 47.2 years. For every 100 females, there were 115.7 males. For every 100 females age 18 and over, there were 120.9 males.

There were 97 housing units at an average density of 12.3 per square mile (4.8/km<sup>2</sup>), of which 78 were occupied, of which 44 (56.4%) were owner-occupied, and 34 (43.6%) were occupied by renters. The homeowner vacancy rate was 2.2%; the rental vacancy rate was 2.9%. 108 people (56.3% of the population) lived in owner-occupied housing units and 84 people (43.8%) lived in rental housing units.<sup>1</sup>

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<sup>1</sup> "2010 Census Interactive Population Search: CA - Olancha CDP". U.S. Census Bureau.

### *Cartago*

The 2010 United States Census reported that Cartago had a population of 92. The population density was 78.5 people per square mile (30.3/km<sup>2</sup>). The racial makeup of Cartago was 63 (68.5%) White, 0 (0.0%) African American, 7 (7.6%) Native American, 0 (0.0%) Asian, 0 (0.0%) Pacific Islander, 11 (12.0%) from other races, and 11 (12.0%) from two or more races. There were 16 people who identified themselves as Hispanic or Latino of any race (17.4%).

All 92 people (100% of the population) lived in households, and none lived in non-institutionalized group quarters or were institutionalized.

There were 44 households, out of which 11 (25.0%) had children under the age of 18 living in them, 18 (40.9%) were opposite-sex married couples living together, 5 (11.4%) had a female householder with no husband present, 2 (4.5%) had a male householder with no wife present. There were 1 (2.3%) unmarried opposite-sex partnerships, and 0 (0%) same-sex married couples or partnerships. 18 households (40.9%) were made up of individuals and 4 (9.1%) had someone living alone who was 65 years of age or older. The average household size was 2.09. There were 25 families (56.8% of all households); the average family size was 2.88.

The population was spread out with 19 people (20.7%) under the age of 18, 9 people (9.8%) aged 18 to 24, 18 people (19.6%) aged 25 to 44, 30 people (32.6%) aged 45 to 64, and 16 people (17.4%) who were 65 years of age or older. The median age was 45.0 years. For every 100 females, there were 124.4 males. For every 100 females age 18 and over, there were 135.5 males.

There were 55 housing units at an average density of 46.9 per square mile (18.1/km<sup>2</sup>), of which 44 were occupied, of which 28 (63.6%) were owner-occupied, and 16 (36.4%) were occupied by renters. The homeowner vacancy rate was 0%; the rental vacancy rate was 0%. 58 people (63.0% of the population) lived in owner-occupied housing units and 34 people (37.0%) lived in rental housing units.<sup>1</sup>

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<sup>1</sup> "2010 Census Interactive Population Search: CA - Cartago CDP". U.S. Census Bureau.

## EXISTING ROAD CONDITIONS<sup>1</sup>

### U.S. Highway 395

U.S. 395 is the key transportation corridor connecting the Eastern Sierra region (Inyo and Mono Counties) and western central Nevada to the southern California region. The corridor has been identified as a Strategic Interregional Corridor in the 2015 Interregional Strategic Transportation Plan<sup>2</sup> and is vital to the economy of the Eastern Sierra region, which imports nearly all of its goods and materials. It is also a major recreational corridor serving Southern California and experiences heavy recreational use, as evidenced by over ten million annual visitor-days of recreation. An origination and destination study<sup>3</sup> conducted in 2011 found that 61% of the traffic on U.S. 395 was recreationally oriented and that recreational vehicles comprised 1.7% of the vehicles. Goods movement accounted for 9% of the total traffic. The study also found that 47% of the vehicles originated in Southern California.

The existing U.S. 395 corridor is an undivided two-lane conventional highway with 12' lanes and 8' paved shoulders, which runs through the Olancha and Cartago hamlets. Caltrans classifies this segment of U.S. 395 as Other Principal Arterial. The speed limit is 65 mph north of Cartago and reduces to 55 mph approximately 1,000' north of Whitney Street in Cartago. At the point of reduction in speed limit for southbound traffic, there is a radar feedback sign informing drivers of their speed. Additional 55 mph speed limit signs are posted between Cartago and Olancha, at a point approximately 1,750' north of Lacey Lane. The speed limit increases to 65 mph south of Olancha, at a point approximately 800' south of the Mobil station. The sign indicating the reduction in speed limit for the northbound traffic from 65 mph to 55 mph is also equipped with a radar detector informing drivers of their speed.

### SR 190

SR 190 is a two-lane corridor running east-west between Olancha and Death Valley Junction. It is an undivided road with 12' lanes and unpaved shoulders. The Federal Highway Administration classifies SR 190 as a Minor Arterial. The westernmost segment of SR 190 intersects the existing U.S. 395 alignment in Olancha, while the easternmost portion intersects SR 127 at the Death Valley Junction. The posted speed limit is 65 mph.

<sup>1</sup> *Olancha Cartago Corridor LSC Existing Conditions Memo*

<sup>2</sup> [http://www.dot.ca.gov/hq/tpp/offices/omsp/system\\_planning/docs/Final\\_2015\\_ITSP.pdf](http://www.dot.ca.gov/hq/tpp/offices/omsp/system_planning/docs/Final_2015_ITSP.pdf)

<sup>3</sup> [http://www.dot.ca.gov/d9/planning/docs/o\\_d\\_study\\_2011\\_2.pdf](http://www.dot.ca.gov/d9/planning/docs/o_d_study_2011_2.pdf)



<b>INTERSECTION ON U.S. 395</b>	<b>WEST LEG</b>	<b>EAST LEG</b>
Whitney Street	N/A	Paved
Lake Street	Unpaved	Paved
New Crystal Geyser Bottling Facility	N/A	Paved
Ranch House Cafe	Paved	N/A
SR 190	N/A	Paved
Fall Road	Paved	Unpaved
Walker Creek Road	Unpaved	Unpaved
Cactus Flats Road	N/A	Paved

### County Roads

County-maintained surface streets access a residential hamlet in Cartago and the Cartago Wildlife Area on the east side of U.S. 395, and a residential hamlet on the west side of the road. Residential hamlets with county-maintained surface streets are also present in Olancha on the west side of the existing U.S. 395 alignment. Golden Trout Wilderness and South Sierra Wilderness are public lands that lie to the west in Inyo National Forest. The wilderness areas can be accessed by vehicle on Forest Service Road 19S01 from Walker Creek and 20S01 from Sage Flats Drive.

### EXISTING INTERSECTION CONDITIONS

Turning-movement counts were conducted along the existing U.S. 395 alignment at the following eight intersection locations:

- Whitney Street
- Lake Street
- New Crystal Geyser Bottling Facility
- Ranch House Cafe
- SR 190
- Fall Road
- Walker Creek Road
- Cactus Flats Road

The paved intersection approaches are as follows:

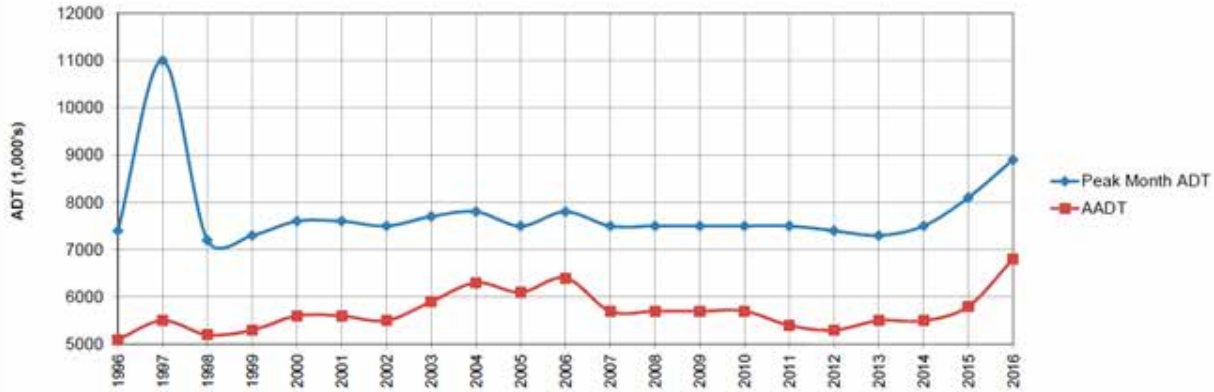
A dedicated right-turn lane is provided on U.S. 395 for northbound traffic entering the old Crystal Geyser facility from 175' south of the southernmost driveway to the northern driveway of the old facility. A 200' turn lane is provided for southbound traffic turning left into the northern entrance of the existing Crystal Geyser facility. A 1,025' acceleration lane is provided for southbound traffic leaving the northern driveway. A right turn lane for the northbound traffic into the new Crystal Geyser facility and an acceleration lane for the southbound traffic leaving the new Crystal Geyser facility have been installed. A left-turn lane is available for southbound left turns into the new Crystal Geyser facility.

The SR 190 intersection is stop-controlled on the SR 190 approach. This intersection has a 150' dedicated turn lane for northbound right turns and a 145' dedicated turn lane for southbound left turns. A 100' acceleration lane is available for traffic turning left from SR 190 onto U.S. 395 southbound. The west leg of the SR 190 intersection is closed with guard rail and signage posted along U.S. 395. Shortly west of the closure a paved road (Shop Street) begins which provides access to the neighborhood and old school west of existing U.S. 395. Although not a maintained road, the segment between the end of Shop Street and the U.S. 395/SR 190 intersection looks to have motorcycle access. All study intersections are stop-controlled on the minor approaches, with no auxiliary lanes, with the exception of the turn lanes on U.S. 395 described above.

## **TRAFFIC DATA**

Historic Annual Average Daily Traffic (AADT) and Peak Month ADT traffic data on U.S. 395 between SR 190 and Nine Mile Canyon Road was reviewed. As illustrated in Figure 1, average daily traffic volumes have increased by an average of 3.6% per year over the past 5-year period of 2012-2016 (the most recent data available). Over the past 10 years, daily volumes generally increased, with an average annual growth rate of approximately 1.4%. Over the past 20 years, daily volumes generally increased with an average rate of increase of approximately 1.8% per year.

Figure 1: Historical ADT on US 395 South of SR-190



### Intersection Traffic Volumes

Intersection turning-movement counts were conducted at the eight locations listed above during peak hours in the summer of 2018. Specifically, traffic counts were conducted on Friday, August 3, 2018 from noon until 2:00 PM, in every location except Lake Street and Fall Road where counts were conducted from 4:00 to 6:00 PM. Counts were conducted on a Friday as a means of capturing peak weekday traffic. Traffic count times were selected to capture the peak traffic at the respective intersections. It was assumed that mid-day traffic would be greatest to capture tourism through the area as the summer traffic volumes on U.S. 395 typically peak in the middle of the day. The Lake Street and Fall Road intersections were counted in the afternoon to capture peak PM commuter traffic. The count data is summarized in Table 1.

Intersection	Peak Hour	Northbound			Southbound			Eastbound			Westbound			Total		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right			
<b>Weekday Peak Hour</b>																
US-395 and Whitney St	12:00-1:00 PM	0	434	1	1	409	0	0	0	0	0	0	1	0	1	847
US-395 and Lake St	4:00-5:00 PM	0	376	1	2	285	2	0	0	0	0	0	0	0	2	668
US-395 and New Crystal Geyser Bottling Facility	12:00-1:00 PM	0	441	7	0	419	0	0	0	0	5	0	0	0	0	872
US-395 and Ranch House Café	12:00-1:00 PM	8	471	0	0	432	9	3	0	7	0	0	0	0	0	930
US-395 and SR-190	12:00-1:00 PM	0	471	26	3	430	0	0	0	0	23	0	0	7	960	
US-395 and Fall Rd	4:30-5:30 PM	2	374	0	0	337	3	2	0	2	0	0	0	0	0	720
US-395 and Walker Creek Rd	12:15-1:15 PM	0	473	0	0	463	0	0	0	0	0	0	0	0	0	936
US-395 and Cactus Flats Rd	12:15-1:15 PM	0	467	2	0	466	0	0	0	0	1	0	0	2	938	

Source: LSC Transportation Consultants, Inc.

As shown, traffic volumes on the side streets are relatively low. The total two-way traffic volume on SR 190 over the course of the peak hour is 59, with 49 trips (83%) made to/from the south on U.S. 395 and the remaining 10 trips made to/from the north.

The traffic counts indicated that at the five intersections where afternoon counts were conducted, 17 vehicles per hour exit to the surface streets on the west side of U.S. 395 and 11 vehicles per hour exit to the surface streets on the east side of U.S. 395, excluding those vehicles going to SR 190. During the two evening counts 7 vehicles per hour exited to the west side of U.S. 395 and 3 vehicles per hour exited to the east side of U.S. 395. At the five intersections where afternoon counts were conducted, 10 vehicles entered U.S. 395 from the west side and 10 vehicles per hour entered U.S. 395 from the east side of the roadway. At the two intersections where evening counts were conducted, 4 vehicles entered U.S. 395 from the west side and 2 vehicles per hour entered U.S. 395 from the east side of the roadway.

### **Driveway Traffic Volumes**

In addition to the 2-hour intersection counts, 15-minute “spot” counts were conducted to capture the vehicles exiting and entering U.S. 395 at the following driveway locations:

- The gold dome on the east side of U.S. 395 in Cartago
- Old Crystal Geyser Driveway
- Post Office / Gus’s Fresh Jerky
- Mobil Station
- Ranch Motel
- Olancha RV and Mobile Home Park
- Rustic Oasis Motel

The count results are summarized in Table 2. The most heavily used location was the Mobil Station, which saw 11 vehicles enter the site and 16 vehicles exit in the 15-minute count.

Friday August 3, 2018												
Driveway Location on US 395	Time Collected (15-Minute Period)	Entering Driveway					Exiting Driveway					Total Two- Way Traffic on Driveway
		To West Side Southbound Right	To West Side Northbound Left	To East side Southbound Left	To East side Northbound Right	Total Entering	From West Side Eastbound Left	From West Side Eastbound Right	From East Side Westbound Left	From East Side Westbound Right	Total Exiting	
Gold Dome	4:00-4:15 PM					0					0	0
Old Crystal Geyser Driveway	4:18-4:33 PM				2	2					5	7
Post Office / Gus's Fresh Jerky	1:33-1:48 PM			3	2	5				3	2	10
Mobil Station	1:15-1:30 PM	6	5			11	10	6				27
Ranch Motel	4:39-4:54 PM	3				3	1	2				6
Olanca RV & Mobile Home Park	4:55-5:10 PM		2			2						2
Rustic Oasis Motel	5:11-5:26 PM					0						0

Source: LSC Transportation Consultants, Inc.

## Economic Data

The area has a small economy consisting of businesses serving U.S. 395 traffic and local residents:

- Exxon-Mobil at 601 US-395, Olanca, CA 93549
- Gus's Fresh Jerky at 580 US-395, Olanca, CA 93549
- Ranch House Cafe at 441 US-395, Olanca, CA 93549
- Ranch Motel at 1995 Highway 395, Olanca, CA 93549
- Olanca RV and Mobile Home Park (includes Olanca Café and Tipi's of Olanca) at 1075 US-395, Olanca, CA 93549

Employers along and adjacent to the corridor include:

- Crystal Geyser Bottling Plant at 1210 South Hwy 395, Olanca, CA 93549
- United States Post Office at 100 S US-395, Olanca, CA 93549
- LADWP Operations at Owens Lake

## EXISTING RELEVANT PLANS

### Inyo County General Plan

The Inyo County General plan is an updated version of the County's 2001 plan. Based on the 2010 Census, Inyo is the second largest county in the state but has a small population of 18,546 people. This is due to the low supply of privately-owned land. The federal government approximately holds and manages 92% of all land within the county, while the City of Los Angeles owns 4% of the land. The State of California is also estimated to own 2-½ % of the county's land.

Under the Inyo County General Plan Policy LU-1.2 New Growth, the County plans to accommodate new growth in existing rural residential communities (Olanca) and ensure proper infrastructure expansion.<sup>1</sup> Policy LU 4.6 Circulation and Safety states the County will require that industrial-related traffic is routed out and away from residential neighborhoods.<sup>2</sup>

<sup>1</sup> Inyo County General Plan, Chapter 2 (Pages 2-4)

<sup>2</sup> Inyo County General Plan, Chapter 2 (Pages 2-13)

Although the economic plan does not list the project study area, it is worth noting that the County wishes to grow its tourist economy and attract the film industry to the general area.<sup>3</sup> This means the County has the intention under its economic plan to grow in size, which may or may not increase the use of an active transportation corridor in the project area.

Furthermore, the circulation plan encourages voluntary reduction of vehicle miles and tracking of new development proposals through the use of innovative transit solutions.<sup>4</sup> In addition, Goal PT-1 states that the County will provide “effective, economically feasible, and efficient public transportation in Inyo County that is safe, convenient, efficient, reduces the dependence on privately owned vehicles, and meets the identified transportation needs of the County, with emphasis on service to the transportation disadvantaged.”<sup>5</sup> Goal BT-1 states the County will encourage and promote greater use of non-motorized means within the region. Under this goal, the County developed policies to plan for bikeway and trail systems based on the bicycle system in the Inyo County Collaborative Bikeways Plan.<sup>6</sup> Section 5.4 of the general plan lists all Bicycle and Trails Implementation Measures which support bicycle, pedestrian, and equestrian trails. The County also will consider the development and adoption of a pedestrian master plan.

Under the public safety plan, Section 7.6 indicates the future traffic noise levels (horizon 2020). The U.S. 395 roadway/segment in Olancha has 8,140 daily traffic volume with 11% of truck traffic.<sup>7</sup>

### **Inyo County Regional Transportation Plan 2015**

The Inyo County Regional Transportation Plan 2015 shares existing road conditions throughout the county, reveals the transportation needs of the area, and provides a 20-year vision plan for the region.

Level of Service (LOS) is used to rate a roadway segment’s traffic flow characteristics. Ranging from LOS A (best conditions) to LOS F (worst conditions), this grading system also helps with identifying the need to improve roads. Caltrans designated LOS C for Inyo County state highway segments. U.S. Highway 395 in the Olancha and Cartago area is graded LOS D, below the county’s grade level.<sup>8</sup> The construction of the four lane highway project is expected to improve

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<sup>3</sup> *Inyo County General Plan, Chapter 3 (Policy ED 1.2 & Policy ED-2.2)*

<sup>4</sup> *Inyo County General Plan, RH 1-2 & RH-1.6 (Page 5)*

<sup>5</sup> *Inyo County General Plan, PT-1 (Pages 5-11)*

<sup>6</sup> *Inyo County General Plan, Policy BT-1.2 (Pages 5-14)*

<sup>7</sup> *Inyo County General Plan (Pages 7-28)*

<sup>8</sup> *Inyo County Regional Transportation Plan (Page ES-3)*

this segment of the highway to a LOS A. The overall County LOS, even after Olancha and Cartago improvements, is expected to remain the same at a LOS C.<sup>9</sup> The segment of U.S. 395 from the Kern County Line to south of Olancha section is graded LOS A. Overall, the report notes that traffic congestion and unsafe conditions (e.g., solo and collision accidents) on U.S. 395 between Olancha and Cartago are the main reasons why widening U.S. 395 is a top priority.<sup>10</sup>

The Olancha-Cartago project is expected to improve travel time along the U.S. 395 corridor and provide more “desirables travel speeds” and “safer passing opportunities on a section of highway with a relatively high accident rate over a ten year period.”<sup>11</sup> Furthermore, truck traffic has generally decreased over the last seven years on U.S. 395 with the exception of SR 168 and U.S. 6 in Bishop; SR 190 between Olancha and the junction with ST 136 has seen an increase in truck traffic of 10 to 18 percent from 2006-2013.<sup>12</sup> In addition, the goods movement is an important part of the regional transportation system and local economy. The local beverage distributor typically uses U.S. 395 south of Olancha.<sup>13</sup> Olancha is also near SR 190 which travels along the south side of Owens Lake near Olancha; this highway is the gateway to Death Valley and is classified as a rural minor arterial.<sup>14</sup>

### **Inyo Active Transportation Plan 2015**

The Inyo Active Transportation Plan 2015 provides a background and history of community involvement. The document also shares county population statistics, commuter patterns, and information on disadvantaged communities. The plan details the existing and proposed bicycle facilities in the County’s Bicycle Element and shares information on pedestrian infrastructure. The last chapters of the plan provide information on the recreational element, safe routes to school element, and a list of proposed active transportation projects.

According to the Census 2010, Cartago has a small total population of 84 people with 55 households; Olancha has a total population of 245 with 87 households.<sup>15</sup> Although Cartago and Olancha have small populations, a few towns like Big Pine and Lone Pine have larger populations with several schools and proposed biking infrastructure along U.S. 395.<sup>16</sup>

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<sup>9</sup> *Inyo County Regional Transportation Plan (Page 31)*

<sup>10</sup> *Inyo County Regional Transportation Plan (Page 13 & 39)*

<sup>11</sup> *Inyo County Regional Transportation Plan (Pages 73 & 76)*

<sup>12</sup> *Inyo County Regional Transportation Plan (Page ES-4)*

<sup>13</sup> *Inyo County Regional Transportation Plan (Page 10)*

<sup>14</sup> *Inyo County Regional Transportation Plan (Page 25)*

<sup>15</sup> *Inyo Active Transportation Plan 2015 (Page 21)*

<sup>16</sup> *Inyo Active Transportation Plan 2015 (Page 27)*

The 2009-2013 American Community Survey reveals that a majority of Inyo County residents drive alone, 7.1% walk, and 0.6% use public transportation.<sup>17</sup> Furthermore, Inyo County does not have a pedestrian plan, although the existing Bicycle Plan provides a safer facility for both cyclists and pedestrians.<sup>18</sup> The majority of recurring regional State Transportation Improvement Program (STIP) funding is tied to the Olancha-Cartago four-lane project. Any non-motorized infrastructure and non-infrastructure projects must seek ATP funds.<sup>19</sup>

### **Lower Owens River Recreation Use Plan 2013**

The Lower Owens River Project is the largest river ecosystem restoration projects in the nation. LADWP, local residents, tribes, and other stakeholders have provided feedback and ideas for the plan. Some key goals for the recreation plan are to strengthen the tourist economy, improve access and wayfinding, as well as inspire cultural and environmental education.<sup>20</sup>

Existing recreation activities take place in portion of Highway 395 from Independence to north of Tinemaha Reservoir, which is a designated State Scenic Highway.<sup>21</sup> Few drivers and road cyclists travel off the main road because of poor road conditions including a lack of paved roads and directional signage. Furthermore, Caltrans conducted an Origin and Destination Study in 2000.

The study obtained information on trip movements and travel patterns on U.S. 395 in Inyo and Mono Counties to plan for future transportation needs and project economic growth.<sup>22</sup> A relevant questionnaire finding was that recreation was the main purpose of the trip by 55% of the respondents. Highway 395 is then referred in the Recreation Use Plan as the “main artery for recreation visitors.”<sup>23</sup>

The proposed recreation enhancements are strengthening area visibility along Highway 395. The six gateway locations proposed are: Blackrock Waterfowl Management Area, Mazourka Canyon, Manzanas, Lone Pine, Pumpback Station, and Delta. A strong consensus was found in the 2012 charrette among stakeholders advocating for better signage along Highway 395.<sup>24</sup>

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<sup>17</sup> *Inyo Active Transportation Plan 2015 (Page 24)*

<sup>18</sup> *Inyo Active Transportation Plan 2015 (Page 39)*

<sup>19</sup> *Inyo Active Transportation Plan 2015 (Page 65)*

<sup>20</sup> *Lower Owens River Recreation Use Plan (Page i)*

<sup>21</sup> *Lower Owens River Recreation Use Plan (Page 13)*

<sup>22</sup> *Lower Owens River Recreation Use Plan (Final Plan, Page 13)*

<sup>23</sup> *Lower Owens River Recreation Use Plan (Final Plan, Page 29)*

<sup>24</sup> *Lower Owens River Recreation Use Plan (Appendix B, Page 30)*



### **Caltrans Olancha-Cartago Four Lane Expressway Project**

The Olancha-Cartago Four Lane Expressway Project Report from June 2017 provides full detail of the background, purpose, process, and recommendations for the expressway project. This section provides more detail surrounding the discussion of culverts.

#### Culverts

The preliminary hydraulic study determined that over 80 new box culverts or pipe culverts will be required. Additional culverts or replacement culverts may also be required under the existing highway to maintain existing drainage patterns. Since the proposed alignment will cross the alluvial fan west of the Los Angeles Aqueduct, there will be a higher risk of flash flooding. It may be necessary to construct entrapment dikes or collection channels along the western boundary of the project to intercept and collect major storm flows. The locations and types of protection facilities will be determined during the PS&E phase and the right of way limits will be adjusted accordingly.

The Caltrans Preferred Alternative will require two bridges to carry the northbound and southbound lanes over the Los Angeles Aqueduct west of Olancha. Large box culverts are also anticipated for the crossings of Olancha Creek and the North Fork of Cartago Creek, and several large washes west of the Los Angeles Aqueduct. An under crossing will be constructed south of the proposed material area and will consist of two 10' x 12' reinforced concrete box culverts. The size and location of the box culverts may be adjusted after further discussions with the communities and local ranchers.

U.S. 395 is part of the State Scenic Highway Master Plan and is eligible for designation as a State Scenic Highway. In the past, District 9 has included viewpoints with projects on U.S. 395 to accentuate the scenic attributes of the highway. A viewpoint is proposed for this project as well and will be located at the apex of the northbound lanes, near the crossing of Olancha Creek. Another viewpoint may also be constructed for the southbound lanes near the same location. The viewpoints will provide views of the Sierra Nevada Mountains to the north and west and the Owens Dry Lake and the Inyo Mountains to the east.

### **Caltrans U.S. 395 Transportation Concept Report**

The Transportation Concept Report U.S. Route 395 District 9 (November 2014) reports on proposed projects and strategies within

the District 9 section of the highway. There is no significant growth or development projected in the rural communities near U.S. 395. There are many planned and programmed projects for U.S. 395. The Caltrans corridor performance table reveals that segment 6 of the highway (Cartago-Olancha) is performing below the concept level of service but will be mitigated by the construction of the 4-lane project, which is expected to be completed in 2021.<sup>25</sup>

This segment of U.S. 395 begins at the north end of the North Haiwee Reservoir and passes by the SR 190 junction and through the communities of Olancha and Cartago. This is an undivided, two-lane expressway with an Other Principal Arterial classification. U.S. 395 is part of the National Highway System and designated as a High Emphasis Route and a Focus Route as part of the Interregional Road System. This segment is also designated as a part of the Strategic Highway Network (STRAHNET). There is motel lodging in Cartago and a Crystal Geyser bottling plant one mile south of Cartago which is a source of considerable truck traffic.<sup>26</sup>

### **Eastern Sierra Corridor Enhancement Program**

The corridor plan establishes the vision for aesthetic enhancements for the Eastern Sierra Corridor and improve the visual appearance of US Highway 395 and State Route 14. Highway 395 and SR 14 carry an increasing number of freight trucks. The development of the Tahoe Reno Industrial Center may add more traffic and may impact Main Street.<sup>27</sup> Residents have also requested methods to reduce travel speeds through their communities and recognize the importance of US 395 for their town and economy. Residents want to make the highway more inviting and make their town a place to visit, walk, live, and work, “this includes improving pedestrian facilities and keeping on-street parking.”<sup>28</sup>

In 2006, ADT through Olancha had 21.5% of the traffic volume made up of trucks. “The highway consists of two-lanes within the hamlets. The speed limit reduces slightly to 55 MPH from south of Olancha to north of Cartago. Through Olancha, the road is lined with large trees and wide shoulders.”<sup>29</sup>

The area has limited undeveloped private property, making it hard for future development to occur. During public meetings conducted by

<sup>25</sup> Caltrans US 395 Transportation Concept Report (Page 18)

<sup>26</sup> Caltrans US 395 Transportation Concept Report (Page 40)

<sup>27</sup> Eastern Sierra Corridor Enhancement Program (Page 3)

<sup>28</sup> Eastern Sierra Corridor Enhancement Program (Page 4)

<sup>29</sup> Eastern Sierra Corridor Enhancement Program (Page 46)

Caltrans, residents had no prevailing sentiment regarding alternatives to the widening project. Residents did point out that they want to see vehicle speeds reduced and ensure business thrives along the highway.

Motorists easily recognize the agricultural heritage of Olancho and Cartago as they reduce travel speeds at the town entries. Travel facilities reinforce the small-town appearance and ranching atmosphere.<sup>30</sup>

Some enhancement opportunities in this stretch were trees lining the highway through Olancho which helped increase town recognition and aid slowing traffic.<sup>31</sup> Also, bypasses might benefit the community by canceling visual, noise, and traffic impacts and create a more pedestrian-friendly environment. Furthermore, developing a separated Class I bike path along the highway through the hamlets can improve the overall walking environment while fitting in with the hamlets' character. Sidewalks may not seem contextually appropriate, but a path system with landscaping can enhance community recognition while moving pedestrians off the highway.<sup>32</sup>

### **Caltrans Strategies for Sustainable Communities Guidebook**

The guidebook provides strategies, progress indicators, and resources for planners around ten defined community types that reflect the diverse communities throughout California. The ten community types are:

1. Major City
- 2. High-Income Inner Suburb
- 3. Mixed-Income Inner Suburb
- 4. Suburb with Employment or Retail Center
- 5. Residential Suburb
- 6. Central Valley Hub City
- 7. Inland Small Town
- 8. Compact Coastal/University City
- 9. Natural Resource Town
- 10. Rural Agricultural and Natural Resource Community

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*30 Eastern Sierra Corridor Enhancement Program (Page 46)*

*31 Eastern Sierra Corridor Enhancement Program (Page 47)*

*32 Eastern Sierra Corridor Enhancement Program (Page 47)*

Based on the Cartago-Olancha area, a summary of “Rural Agricultural and Natural Resource Community” has been provided. Some of the goals of a rural community include strengthening the community’s economic base by preserving natural resource lands, direct development to area with existing infrastructure, and provide transit linkages to regional services and amenities like hospitals and commercial centers.<sup>33</sup> Some of the challenges include: vulnerable economy, through traffic, housing needs, and access to goods and services.

Some of the strategies for sustainable communities are to discourage non-local and commercial traffic on neighborhood streets and use speed management in town centers and rural/town transition areas to create or maintain walkable rural towns.<sup>34</sup> The guidebook includes a table of success indicators and metrics (e.g. safer streets) for future reference.

### **Caltrans: Main Street California**

The Division of Design and Caltrans’ Maintenance and Operations and Planning and Modal Programs partnered together to complete an evaluation of concepts to assist Caltrans to improve the vitality of state highway main streets.

State highway main streets must accommodate the circulation of the local community and statewide travel demands. Caltrans provides extensive design guidance and standards for the State Highway System in the Highway Design Manual (HDM). Expanding the role of main streets in communities requires “stakeholders and local agencies to play an expanded role in planning, design, and maintenance operations and/or ownership of main street.”<sup>35</sup> Main street transportation projects can benefit the local economy and taxpayers.<sup>36</sup> The document summarizes design, planning, and access recommendations for these types of main streets. Images of U.S. 395 were used throughout the report, but the highway was not specifically mentioned.

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<sup>33</sup> Caltrans Strategies for Sustainable Communities Guidebook (Page 37)

<sup>34</sup> Caltrans Strategies for Sustainable Communities Guidebook (Page 38)

<sup>35</sup> Caltrans: Main Street California (Page 11)

<sup>36</sup> Caltrans: Main Street California (Page 22-23)

## KEY DESTINATIONS (SEE KEY DESTINATIONS MAP)

### Cartago

#### Cartago Wildlife Area

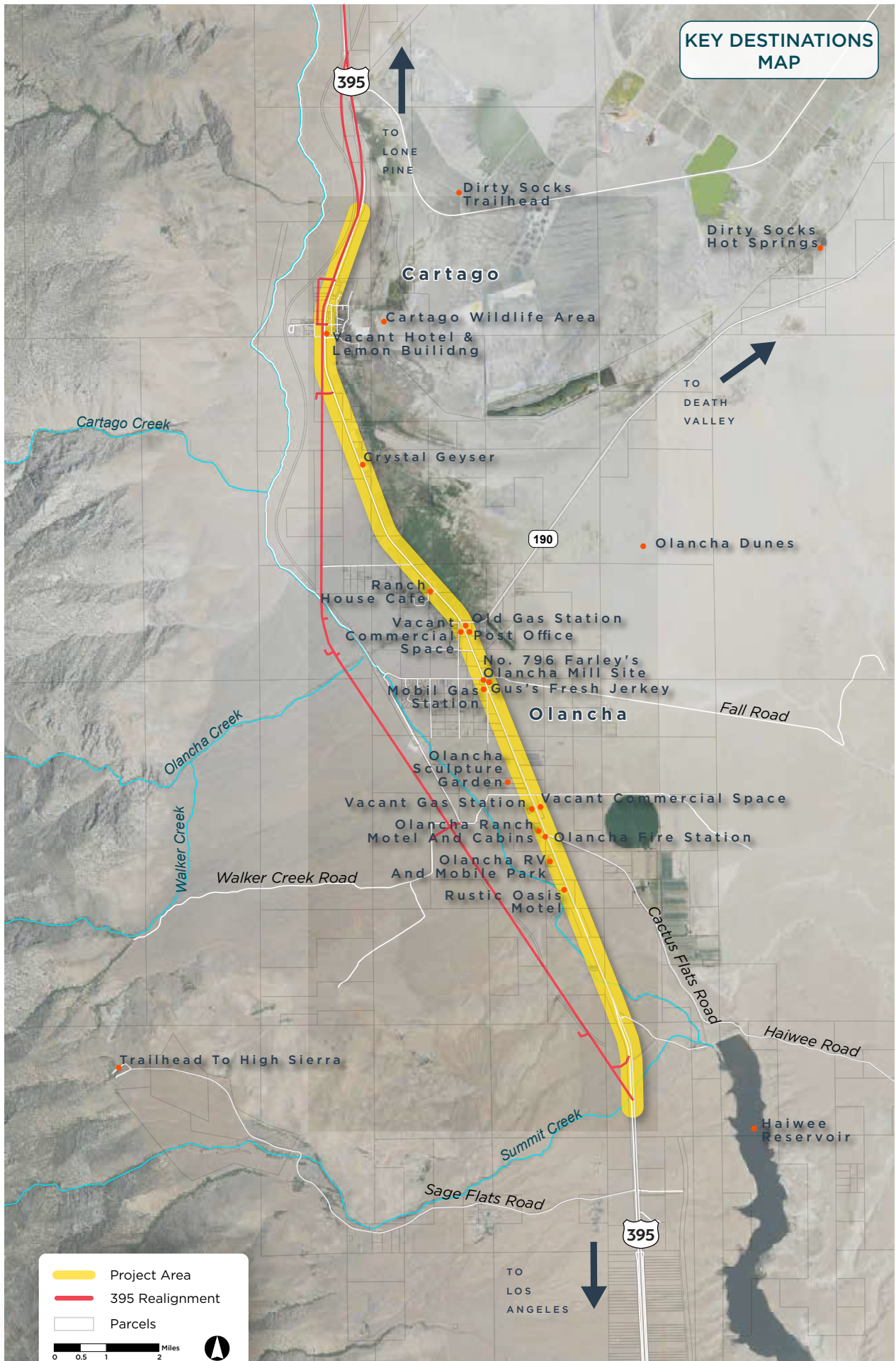
The Cartago Wildlife Area consists of 218 acres of freshwater wetland and springs. It is 0.2 miles from Highway 395 and can be accessed most directly via Whitney Street, although satellite imagery suggests informal paths are used as well. Whitney Street is a local two-way paved street. Whitney Street officially ends at Mojave Street, but a dirt path continues to create a loop. The satellite image shows an 18-wheeler using this road perhaps to turn around. Owens Dry Lake is designated as a Nationally Significant Important Bird Area by the National Audubon Society and American Bird Conservancy. Activities permitted in this area include wildlife viewing, bird watching, photography and hunting. This is a Type C Wildlife area that allows waterfowl, dove, quail and rabbits to be hunted with shotguns. It should be noted that by removing the 395 designation it may change the hunting regulations to allow pistols and rifles which are currently illegal given the proximity to the highway. It is possible that this may increase usage among hunters.

#### Haiwee Reservoir

The Haiwee Reservoir is actually two reservoirs – the North Haiwee and the South Haiwee – and is part of the Los Angeles Aqueduct system. It is controlled by LADWP and has a contentious history with the residents of Owens Valley. LADWP has restricted public access due to national security concerns about water-tampering. The Owens Valley Committee 501(c)3 has been active in advocating for water rights access, and it was briefly granted before being revoked after 9/11.

The proposed public access points from Highway 395 include North Haiwee Road, Lakeview Drive, Haiwee Canyon Road, and South Haiwee Road. There is also a path that goes along the Reservoir. Satellite imagery indicates highway extensions that lead to dirt roads (named and unnamed).

There is a plan to reinforce the North Haiwee Dam from seismic activity. A February 13, 2018 amendment to the LADWP agreement with Black and Veatch Corporation (No. 47879) indicates that Cactus Flat Road will need to be realigned in order to reinforce the dam's foundation. Cactus Flat Road connects Grant to the North Haiwee Reservoir. Construction to realign Cactus Flat Road will start in October 2018, dam reinforcement construction in August 2020, with total project completion by January 2025.



### Cottonwood Creek Charcoal Kilns

The Cottonwood Charcoal Kilns produced coal for the Cerro Gordo mine in the 1800s. It is considered a California Historical Landmark (No. 537). The road to the Cottonwood Charcoal Kilns is marked by a simple sign seven miles north of Cartago. The dirt road travels east for approximately one mile. The remains of the two kilns are surrounded by a wire fence.

### Coso Range Wilderness Area

Coso Range Wilderness Area is located 6 miles northeast of Olancho and is managed by the Bureau of Land Management. From Highway 395, the west side of the area can be accessed along Cactus Flat Road. This large swath of land encompasses a variety of natural attractions. Activities allowed in this area include camping, hiking, horseback riding, and hunting. The signs indicating “Wilderness Area” and “Closed Road” or “Closed Route” are placed at various intervals. Vehicles can be parked outside the wilderness boundary; however, the boundary is set back 30 feet on unmaintained dirt roads, and 300 feet on paved roads. Mechanized or motorized vehicles are not permitted in wilderness. The following trails have been identified for further study:

- Coso Range Wilderness Trails (BLM Desert Access Guide: Panamint)
- Lava Lake Road Trail which includes access to the Olancho Dunes off-road riding off 190 from 395
- The South Sierra Wilderness is nearest the project corridor with two access points from the 395
- South Sierra Wilderness Area including the Haiwee Pass Trail and Olancho Pass Trail
- Golden Trout Wilderness including the Blackrock Trailhead
- There are several horseback trails that are off 395 south of the Haiwee (Coso Junction) reservoir.

### **Olancho**

#### Olancho Peak Trail

Olancho Peak is a 22 mile lightly trafficked out and back trail located near Olancho, California that features beautiful wild flowers and is rated as difficult. The trail offers a number of activity options and is accessible year-round. Dogs are also able to use this trail.

### Olancha Sculpture Garden

Artist Jael Hoffman has created a Sculpture Garden on her property off of 395. It is open to the public at all times.

### Owens Lake Trails

In response to LADWP efforts to control dust in Owens Lake, they funded the creation of four miles of walking paths, overlook areas, and land art installations. These aim to enhance public access, recreation, and wildlife habitat. In addition to informational kiosks about the dust mitigation project, there are art installation projects at each trailhead. These striking structures use natural elements that also assist in controlling dust. As the master project notes, the roadways were not designed for public use and risk contributing to the dust that the project is seeking to mitigate. Therefore, current public access point along 395 is at Boulder Creek. Closer to Olancha, the area can be accessed from Highway 190 using the Dirty Soaks T1A-2 access route. Cars are only allowed on maintenance berm roads.

### Metabolic Art Studio Pittsburgh Plate Glass Art Installation

North of Bartlett on Highway 395 off of Carroll Creek Road there is a mural (or a sign) on an old tank. Continuing down the road allows access to the old Pittsburgh Plate Glass Company. The factory was in operation from 1928-1968. The property was purchased and now has partnered with Metabolic Studio, an artist collective. Currently the Metabolic Art Studio has turned the silos into a musical instrument that is streamed live on the internet.

### Cerro Gordo

The Cerro Gordo Mines are a collection of abandoned mines located in the Inyo Mountains, near Lone Pine, California in Inyo County, California. Mining operations were undertaken from 1866 until 1957, producing high grade silver, lead, and zinc ore. Some ore was smelted on site, but larger capacity smelters were eventually constructed along the shore of nearby Owens Lake. Now the mines and adjacent ghost town are a lightly trafficked tourist destination. The town was put up for sale in June 2018, and sold the following month to Los Angeles entrepreneurs who planned to keep it open to the public.<sup>37</sup>

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<sup>37</sup> Graff, Amy (July 16, 2018). "Historic California ghost town sells for \$1.4 million on Friday the 13th". *San Francisco Chronicle*.



### Horseshoe Meadow

Horseshoe Meadow is a vast 10,000-foot high meadow, surrounded by lodgepole pine forest. The road to Horseshoe Meadow climbs over 6,000 feet, as it winds its way up from Lone Pine. Three campgrounds are located in the Horseshoe Meadow Area. Trails from Horseshoe Meadow provide access to the Golden Trout Wilderness and Sequoia-Kings Canyon National Park. The road to Horseshoe Meadow is closed from approximately November to May due to snow.<sup>38</sup>

### Coso Safety Roadside Rest Area

Rest areas for 395 travelers with restrooms, water, picnic benches, phone, and handicapped access.<sup>39</sup>

### Death Valley/Highway 190

Death Valley is a desert valley located in eastern California, in the northern Mojave Desert bordering the Great Basin Desert. It is one of the hottest places in the world at the height of summertime along with deserts in the Middle East.<sup>40</sup>

Death Valley is a major destination for travelers in the area and the destination or origin for almost all travelers using SR-190. In 2017, 1,294,827 people visited Death Valley.<sup>41</sup>

## Tourism Efforts

### El Camino Sierra

El Camino Sierra is an effort by the Inyo Good Road Club to brand portions of the 395 and give a nod to the history of the corridor.<sup>42</sup>

### Eastern Sierra Scenic Byway

Eastern Sierra Scenic Byway symbols identify scenic turnouts and interpretive displays along the corridor from Highway 89 to Little Lake.<sup>43</sup>

<sup>38</sup> <https://www.fs.usda.gov/recarea/inyo/recarea/?recid=20700>

<sup>39</sup> <http://www.dot.ca.gov/maintenance/coso-junction.html>

<sup>40</sup> <https://www.wunderground.com/blog/weatherhistorian/world-heat-record-overturndea-personal-account.html>

<sup>41</sup> <https://www.nationalparked.com/death-valley/visitation-statistics>

<sup>42</sup> <https://www.theothersideofcalifornia.com/el-camino-sierra/>

<sup>43</sup> <https://easternsierrabyway.com/>

## TRAFFIC SIGNAL WARRANTS AND SPEED LIMITS

### TRAFFIC SIGNAL WARRANTS

The investigation of the need for a traffic control signal should include analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions with installation of a signal. A traffic control signal warrant study is the first step in determining whether to consider the provision of a traffic signal (or roundabout) at an intersection. The 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD), Revision 4 (published by Caltrans, last updated on March 29, 2019 and based on the federal MUTCD published by the Federal Highway Administration) specifies nine traffic signal warrants, as follows:

- Warrant 1 - Eight-Hour Vehicular Volume
- Warrant 2 - Four-Hour Vehicular Volume
- Warrant 3 – Peak-Hour Vehicular Volume
- Warrant 4 - Pedestrian Volume Warrant
- Warrant 5 - School Crossing Warrant
- Warrant 6 - Coordinated Signal System Warrant
- Warrant 7 - Crash Experience Warrant
- Warrant 8 - Roadway Network Warrant
- Warrant 9 - Intersection Near a Grade Crossing

Most of the traffic signal warrants are based on vehicular and pedestrian traffic volumes. The nine warrants have been developed to identify those locations where a signal would provide an overall benefit. Locating traffic signals consistent with the conclusions of a warrant analysis is important in limiting the potential liability of the authorizing jurisdiction. The California MUTCD states that, “The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.” A signal can be considered if at least one of the warrants are met and an engineering study indicates that installing a traffic signal will improve the overall safety and/or operation of the intersection.

## **Warrant Descriptions**

The nine individual traffic signal warrants are briefly described below.

### *Warrant 1: Eight-Hour Vehicular Volume*

The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

### *Warrant 2: Four-Hour Vehicular Volume*

The Four-Hour Vehicular Volume signal warrant condition is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

### *Warrant 3: Peak Hour*

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. Warrant 3 is intended to be “applied only in unusual cases, such as office complexes, etc., or high occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time” (CA MUTCD).

### *Warrant 4: Pedestrian Volume*

The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the street.

### *Warrant 5: School Crossing*

The School Crossing signal warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.

### *Warrant 6: Coordinated Signal System*

Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles. This warrant does not pertain to the study corridor in Olancha-Cartago.

*Warrant 7: Crash Experience*

The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

*Warrant 8: Roadway Network*

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. It is applicable only to intersections of two or more major routes. This warrant does not pertain to the study intersection, as Apache Avenue is not a major route as defined in the California MUTCD.

*Warrant 9: Intersection Near a Grade Crossing*

This warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal. This warrant does not pertain to the study corridor in Olancha-Cartago, as no railroad crossings are present.

The peak-hour warrant is the most commonly used, as it is usually the first warrant to be met. As none of the intersections along the study corridor would come close to meeting minimum warrant volumes for an all-way stop, new traffic signals or roundabouts are also not expected to be needed.

## **SIGNAL TRAP LAW**

Per the California “speed trap” law (Vehicle Code Section 40802), speed limits must comply with the speed trap law. This law requires that speed limits generally be set close to the 85th-percentile observed travel speed, except where an Engineering and Traffic Survey (E&TS) warrants a deviation (except local streets, roads and school zones are exempt). The 85th-percentile of the distribution of observed speeds (the speed that is only exceeded by 15 percent of the vehicles) is the most frequently used measure of the operating speed associated with a particular roadway location.

An E&TS typically includes the following:

- Description of existing roadway conditions
- Speed Study (including the current speed distribution of free-flowing vehicles)
- Existing speed limits
- Existing traffic control devices
- Review of historical crash data
- Roadside conditions
- Recommendations for speed limits
- Basis for recommendations
- Identification of enforcement
- Method of implementation

Residential density and/or pedestrian and bicyclist safety may also be addressed in an E&TS. It is expected that a future E&TS would continue to define a 65 MPH speed limit south of Olancha (on the renumbered SR 190 segment) and a 55 MPH speed limit from south of Olancha to Cartago, given the generally straight and flat alignment.

As the northern segment (from Olancha to Cartago) would be relinquished to the County, whether it could be considered a “local” road (and would therefore not be required to justify the speed limit with an E&TS) is explored. According to Vehicle Code Section 40802(b), the road either needs to be classified as “local” on the “California Road System Maps” that are approved by the FHA and maintained by Caltrans, or it may be defined as a “local street or road” if it primarily provides access to abutting residential property and meets the following three conditions:

- Roadway width of not more than 40 feet. (The existing U.S. 395 is more than 40 feet wide at some locations along this segment.)
- Not more than ½-mile of uninterrupted length. Interruptions shall include official traffic control signals. (The existing segment has more than ½-mile of uninterrupted length.)
- Not more than one traffic lane in each direction.

Given the extent of commercial/business zones along the northern segment, it seems inconsistent with the definition of a local road.

## SETTING OR REDUCING SPEED LIMITS

The California Vehicle Code (CVC) 22349, Maximum Speed Limit, prescribes the speed limits in California. When speeds are to be lowered based on an Engineering and Traffic Survey (E&TS) on the state highways, the District Traffic Engineer is charged with determining speed limits. On local roads, the local agency has this function.

### Caltrans Speed Limit

The Caltrans Highway Design Manual refers to the CA MUTCD regarding speed limits and speed zones. According to Section 2B.13 in the CA MUTCD,

*“The setting of speed limits can be controversial and requires a rational and defensible determination to maintain public confidence. Speed limits are normally set near the 85th-percentile speed that statistically represents one standard deviation above the average speed and establishes the upper limit of what is considered reasonable and prudent. As with most laws, speed limits need to depend on the voluntary compliance of the greater majority of motorists. Speed limits cannot be set arbitrarily low, as this would create violators of the majority of drivers and would not command the respect of the public.”*

The CA MUTCD sets forth that speed zones (other than statutory speed limits) shall only be established on the basis of an E&TS that has been performed in accordance with traffic engineering practices. An E&TS for State highways (such as SR 190) is made under the direction of the Caltrans District Traffic Engineer. The E&TS data must include (among other things) a report to the District Director that includes the reason for the initiation of a speed zone survey, recommendations and supporting reasons, the enforcement jurisdictions involved, and the recommendations and opinions of those officials. Note that the establishment of a speed limit of more than 5 mph below the 85th-percentile speed should be done with great care as studies have shown that establishing a speed limit at less than the 85th-percentile generally results in an increase in crash rates.

As previously mentioned, it is expected that a future E&TS would continue to define a 65 MPH speed limit south of Olancha (on the renumbered SR 190 segment) and a 55 MPH speed limit from south of Olancha to Cartago, given the generally straight and flat alignment.

## Inyo County Speed Limit

Speed zones are addressed in Chapter 10.48 of the Inyo County Code, which references Section 22358 of the Vehicle Code. According to this section, whenever the board determines upon the basis of an E&TS that the limit of 55 MPH is more than is reasonable or safe upon any street or road with a speed limit of 55 MPH, the board shall, by ordinance, determine and declare a lower speed limit, which is appropriate to facilitate the orderly movement of traffic and is reasonable and safe. In other words, based on the applicable code, an E&TS is required in order to reduce the speed limit on county roads.

For an E&TS for County Through Highways, Arterials, Collector Roads and Local Streets, in most situations, the method of speed zoning is based on the premise that a reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorists' speeds, one will be able to select a speed limit that is both reasonable and effective. Other factors that need to be considered include but are not limited to: the most recent two-year collision record, roadway design speed, safe stopping sight distance, superelevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, and pedestrian traffic in the roadway without sidewalks. However, in some situations, the procedure used on State highways may be used at the option of the local agency. (CA MUTCD Section 2B.13)

As previously mentioned, it is expected that a future E&TS would continue to define a 55 MPH speed limit on the segment relinquished to the County (from Olancha to Cartago). If the community desires slower speeds in specific locations, implementation of physical traffic calming features should be considered. Some examples include:

- Provide community gateway feature
- Provide landscaping along the sides of the road (which changes perceived speeds)
- Divert drivers horizontally, such as via installation of a central median island
- Divert drivers vertically, such as with speed humps

Neighborhood traffic management strategies are typically only effective over a relatively short length of roadway. Signage is not effective over long distances of straight, flat road. As such, traffic calming strategies should focus on specific short areas where speeding affects the quality of life and where some physical change would help slow speeds.

## DESIGN TOOLKIT

A design toolkit was developed to present a collection of treatments and strategies that could be applied to the corridor to meet the community's goals for the study. Toolkit elements are grouped into three broad categories: Runs, Riffles, and Pools.

Specific toolkit elements include bicycle, pedestrian, and equestrian improvements to strengthen active transportation options, branded gateway, wayfinding, and public

art elements to attract visitors to the area, and programming and policy initiatives such as zoning changes and temporary programming to spur local economic development.

A combination of the elements in the toolkit were used to develop a concept plan and list of priority projects for the corridor.



### RUNS

Active transportation, safety, and wayfinding elements



### RIFFLES

Active areas, amenities, and temporary programming



### POOLS

Moments of pause and placemaking



**PEDESTRIAN IMPROVEMENTS**



<b>Paved Side Path</b>	A paved side path adjacent to the roadway along the corridor designed for pedestrian use explicitly
<b>Crosswalk with RRFB signal</b>	Rectangular Rapid Flash Beacons (RRFB's) are used to increase the visibility of pedestrian crosswalks, particularly at unsignalized intersections like those along Fall Rd, Hwy 190, and Lake St.
<b>Shared-use side path</b>	A paved side path adjacent to the roadway that is designed for shared use between people walking and people on bicycles
<b>DG Side Path</b>	An unpaved side path with fencing adjacent to the roadway designated for shared pedestrian and equestrian use

**BICYCLE IMPROVEMENTS**



<b>Class II Bike Lane</b>	A Class II bike lane is an on-street designated bike facility utilizing striping and stencils. Class II Bike Lanes are most effective on streets with a speed limit under 35mph and is recommended along the corridor south of the 190 junction
<b>Class IV Bike Lane</b>	A Class IV (on-street, separated) bikeway includes some type of vertical element separating vehicle and bicycle traffic. This physical separation adds a level of comfort and safety for people riding bikes
<b>Class I Bike Path</b>	A Class I bikeway is an off-street dedicated bike facility entirely separated from vehicular traffic which is recommended north of the 190 junction (shared-use path)
<b>Shared-use side path</b>	A paved side path adjacent to the roadway that is designed for shared use between people walking and people on bicycles



*A Class II bike lane near a raised crosswalk with median refuge island*



*A shared use path striped for separated uses by bikes and pedestrians*



*A Class IV separated bike lane using curb stops and flexible delineators.*

**EQUESTRIAN IMPROVEMENTS**



**Equestrian Trails (through neighborhood)**

Equestrian trails through neighborhoods will allow for horse-riders to use adjacent roads and areas to connect an equestrian-use network throughout the corridor. The re-alignment may allow for additional crossings and equestrian access that did not exist before

**Equestrian Trail**

An equestrian trail is recommended south of the northern gateway through the corridor that is designed minimally without grading or clearing and using the native materials

**Enhanced Equestrian Trail**

An enhanced equestrian trail would be made of decomposed granite or other materials, graded and cleared to allow for riding two abreast

**Equestrian Amenities**

Equestrian amenities include troughs, hitching posts, tie-offs, and riding rings among others

**RECREATION IMPROVEMENTS**



**BMX Park / Cyclecross Track**

A recreational park for trick riding with both bmx and cyclecross specific elements that would complement the skate parks that exist in Lone Pine and Bishop

**OHV trail**

Off-Highway Vehicle (OHV) trails allow for the recreational use of motor vehicles on cleared and graded "double track" trails. Potential OHV use is recommended 395 adjacent



*A graded equestrian trail with split rail fencing*



*An OHV trail running parallel to the main vehicular roadway*



*An equestrian trail running parallel to a roadway with minimal grading and vinyl fencing*

**TRAFFIC CALMING**



<b>Traffic Circle</b>	Traffic circles, also known as roundabouts, are a traffic calming strategy utilized at intersections where traffic flows in one direction around a center island. Traffic circles are recommended at Fall Rd, Hwy 190, and Lake St intersections
<b>Crosswalk</b>	Crosswalks are pedestrian crossing areas composed of striping patterns that can also be raised to create a “speed table” which slows traffic, but is usually appropriate for roads with speeds less than 45mph. Crosswalks with pedestrian refuge islands are recommended at Fall Rd, Hwy 190, and Lake St.
<b>Roadway Narrowing</b>	Roadway narrowing is traffic calming strategy used along corridors and at intersections that narrows the roadway both visually and physically through the use of native planting “curb” extensions
<b>Flashing Beacons</b>	Flashing beacons are to be used with crosswalks to increase visibility and alert drivers of crossing pedestrians

**WAYFINDING**



<b>Destination Signage</b>	Destination signage is simply signage directing users to the corridor from U.S. 395 as well as signage within the area to direct users to Key Destinations
<b>Bike and Pedestrian Signage</b>	Bike and pedestrian signage is more specifically signage directing users to bike and pedestrian facilities both from the U.S. 395 and from within the project area
<b>Enhanced Bike and Pedestrian Signage</b>	Enhanced bike and pedestrian signage would include the time estimates of different modes of travel to let people know how long it would take to reach different destinations and could encourage activity
<b>Informational Kiosks</b>	Informational kiosks could help provide a sense of place and culture by telling the region’s story or natural history and are recommended at potential trailheads



*Signage directing users to bike and pedestrian facilities as well as destinations*



*A raised crosswalk slows traffic and allows pedestrians to cross the road safely*



*Kiosks and signage creates a sense of place and teaches visitors about the area’s history*

**WAYFINDING**

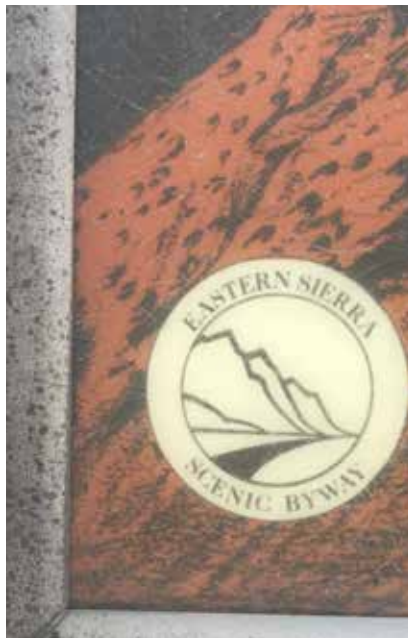


<b>Gateway Signage</b>	Gateway signage would be placed on the side of a building or structure to welcome users to the corridor and create a sense of place
<b>Enhanced Gateway Signage</b>	Enhance gateway signage would involve the development of a standalone signage structure that represents the local character and creates a sense of place
<b>Gateway Structure</b>	A gateway structure can be any kind of aesthetic architectural element spanning over the roadway
<b>Roadway Markings</b>	Roadway markings use the street to announce the corridor and add to the sense of place. Markings would be used throughout the corridor and draw from the locally iconic and well-loved Route 66 precedent

**POLICY INITIATIVES**



<b>Interim-Use Agreements</b>	Interim-use agreements allow for currently underused buildings to be rented out at low cost until they are developed. Potential opportunity sites include the Gas Station at Lake St, Lemon Building, Bar Ranch, and the Cafe at 660 US 395. This strategy can help reduce blight, boost a local economy and potentially revitalize an area
<b>Tax incentives</b>	Tax Incentives for existing and new local businesses can help sustain and grow the economy which may feel pressure from the re-alignment
<b>Land Easements</b>	Land easements on county land adjacent to the corridor could be levied and leased to business interests or developed into public space and amenities
<b>Zoning Code Amendments</b>	Amendments to the zoning code could include re-zoning of property to facilitate adaptive reuse development



*Branding helps create a sense of place and can give cohesion to the corridor*



*Policy initiatives can spur redevelopment. This old gas station has become a restaurant*

**WAYFINDING**



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**BUSINESS**



**Grocery Store**

A grocery store would serve the local community and could attract drivers into the project area from US 395. Potential locations for several new businesses are identified throughout the corridor

**Museum**

A museum could serve as a tourist attraction and help to preserve and proliferate the rich history of the Owens Valley

**Gift Shop**

A gift shop selling goods unique to the area could attract visitors and encourage commercial activity along the corridor. Potential locations for several new businesses are identified throughout the corridor

**Visitor Center**

A visitor center is less formal than a museum and could provide similar educational and community-based services

**Brewery/ Taproom**

A brewery could increase commercial activity along the corridor, providing a key destination for visitors and locals alike to relax, eat, and drink. The area's pristine water has spurred the interest of brewers in the past

**Electric Charging**

An electric vehicle (EV) charging station could serve members of the regional Olancha community and provide a necessary service to some visitors. One Electric Charging station exists in Grant but does not service many types of EV's



*A state of the art charging station near Inyokern*



*A public park with grass for recreation*



*A public park with exercise equipment*

**PUBLIC GATHERING SPACES**



<b>Public Park</b>	A park in the project area with recreation/play activity areas open to all locals and visitors
<b>Dog Park</b>	Enclosed off leash park area for people to let their dogs run and play
<b>Community Garden</b>	A public garden and gathering place that provides produce and a local connection for the community
<b>Games/Play (non-kid)</b>	Interactive games/structures. E.g. horse shoes, bocce ball, other durable things you see at outdoor bars, adult swings
<b>Roadside Plaza</b>	Roadside plazas are stopping areas adjacent to the corridor with basic amenities meant to provide respite for drivers but can also act as public gathering spaces for locals as well
<b>Playground</b>	Playgrounds offer children a recreational outlet and giving children a safe place to play is important for any community
<b>Wildlife Viewing</b>	Wildlife viewing opportunities in this area would offer nature-enthusiasts the opportunity to observe some of the more subtle wildlife in the area
<b>Disc Golf Course</b>	A disc golf course can be expansive but is a relatively low-impact and low-cost recreational amenity and attraction. Can accompany trails and educational features
<b>Seating</b>	Seating allows for path users to take breaks and could also activate a public space. Seating could be located at trailheads, the public transit stop in Olancha, or at a school bus stop. Any seating in the area should include a shade structure
<b>Lighting</b>	Lighting in key areas could make the area feel more welcoming. Pedestrian scale lighting would not impact view of night sky
<b>Exercise Equipment</b>	Public exercise equipment can promote health and fitness in the area. This type of equipment is sometimes located near trails for those who want to do a full body exercise
<b>Picnic Benches and Tables</b>	A picnic area could potentially attract drivers from the 395 as well as provide gathering space for locals

**AMENITIES**



*A concept for public art that highlights the surrounding landscape*



*This musical road in Japan entertains visitors*



*This sculpture in the Bay Area interacts with strong winds to create sound*

**AMENITIES**

<b>Public Trash Cans and Recycling</b>	Any new public gathering areas in the area should include a trash receptacle to reduce littering
<b>Public Restroom</b>	There may be a need for a public restroom to attract drivers from the 395 into the project area. Restrooms could potentially be placed in coordination with trailheads or roadside plazas

**PUBLIC ART**

<b>Local Sculpture</b>	Artworks from local artist Jael Hoffman along the project corridor could attract visitors and create a sense of place
<b>Interactive Wind Sculpture</b>	The area's signature high winds could be harnessed by a sculpture that produces sound or movement
<b>Musical Road</b>	A musical road could serve as a tourist attraction and help to create a sense of place along the corridor
<b>Murals</b>	Murals are a low cost way to create a sense of place and could be ideally carried out by local artists
<b>Picture Frame Billboard</b>	Large billboard weathered steel frames could highlight dramatic views along the corridor and signify photo opportunities
<b>Roadway Paintings</b>	Paintings on the roadway itself are sometimes used to calm traffic and give a sense of identity