Ventura County Technical Assistance Project

Project Overview & Scope of Work

Background:

Ventura County is one of 58 counties in the State of California. The county's landmass ranges in elevation from the coast (sea level) to 8,831 feet. The diversity of the geography is notable, with 42 miles of coastline, dense forests at high elevation, and fertile valleys. The valleys in the southern half of the county make Ventura County a leading agricultural producer. Together, farming and the Los Padres National Forest occupy half of the county's 1.2 million acres.

Located along the Pacific Coast between Los Angeles and Santa Barbara counties, Ventura County has a population of 846,006 and a civilian labor force of 348,100. The county has 314,300 wage and salary civilian jobs, which is still below its 2006 peak of 321,800 jobs. While the countywide unemployment rate is below the statewide average, several cities in the county continue to struggle with unemployment, including Oxnard, Santa Paula and Fillmore, as well as unincorporated communities such as Oak View and Piru. The census tracts 06111000304, 06111000600, and 06111001302 are specifically designated as opportunity zones, and there is significant overlap with these census tracts and areas deemed to be "socially vulnerable communities". This definition is based upon CDC's recent evaluation of emergency response preparedness based on existing geography and available infrastructure.

The Ventura County CEDS states that it is imperative to "address deficiencies in broadband capacity in many communities in this region. It is critical for an economy with high-performing, high-tech manufacturing, finance and insurance sectors to be connected reliably, and globally. Ventura County needs to set a high standard for total available capacity and to develop and implement local tools and capacity to drive business broadband adoption and utilization." Of the five Regional Economic Development Goals proposed in the CEDS, two are directly related to the project proposed in this application:

1. Promote regional collaboration among jurisdictions and economic stakeholders throughout Ventura County and with state and regional partners outside the County.

A number of critically important issues to Ventura County businesses and residents are county-wide and often extend beyond the county's boundaries. Some issues include workforce development, branding and marketing, backbone transportation

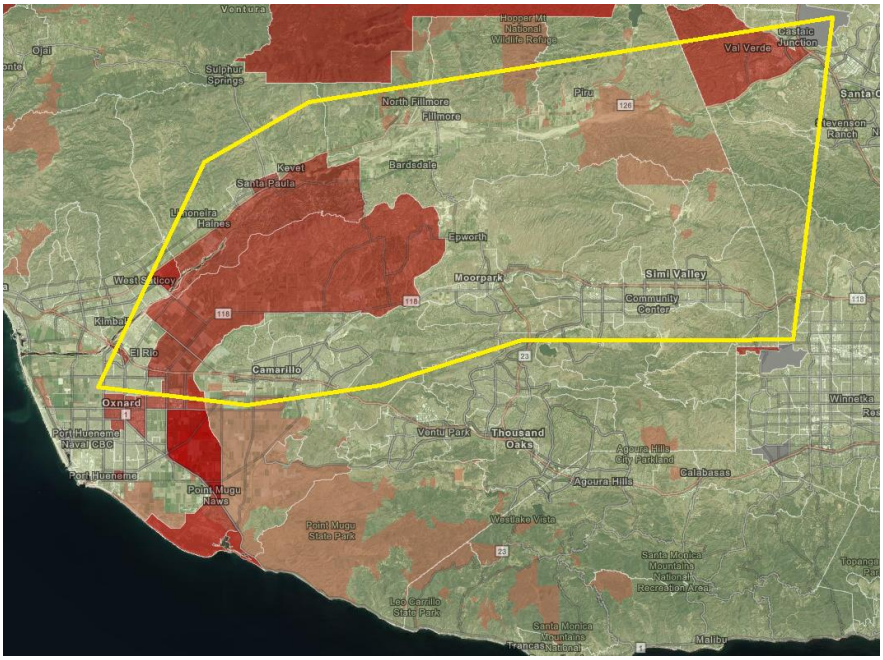
infrastructure, sustainable management of water supplies, industry cluster expansion and retention, and enhancement of broadband capacity.

4. *Improve regional infrastructure including water resource management, transportation and broadband*.

Many critical infrastructure systems require a regional approach to designing technical solutions, securing funding and creating efficiencies to maintain sustainable systems. Effective regional collaboration on these issues would improve the business climate and overall quality of life throughout the county.

The county's long-term goal is to improve broadband connectivity for the remaining areas still without sufficient broadband services in place. The county has received many public comments, inquiries and requests related to broadband access over the last few years. While the input has been helpful to demonstrate need, the county must now engage in high level and detailed design of additional middle mile infrastructure to serve the communities most in need. <u>The County requests $491,420.00 in funding to complete this work.</u>

The grant application we are submitting to this Local Agency Technical Assistance program will focus on the areas outlined in yellow below. A more detailed infographic is provided in the scope of work section.



Areas shaded in red are a combination of populations with “Ookla Median speeds Fixed Broadband Below 25/3 Mbps at the census tract level” and “25% or More of Households Report No Internet Access at the census tract level.”

Every community along the planned route is listed as a Socially Vulnerable Community. Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss. A rating of “High” is given to communities with a statistic of .75 or higher. All communities listed above are labeled as high-risk.

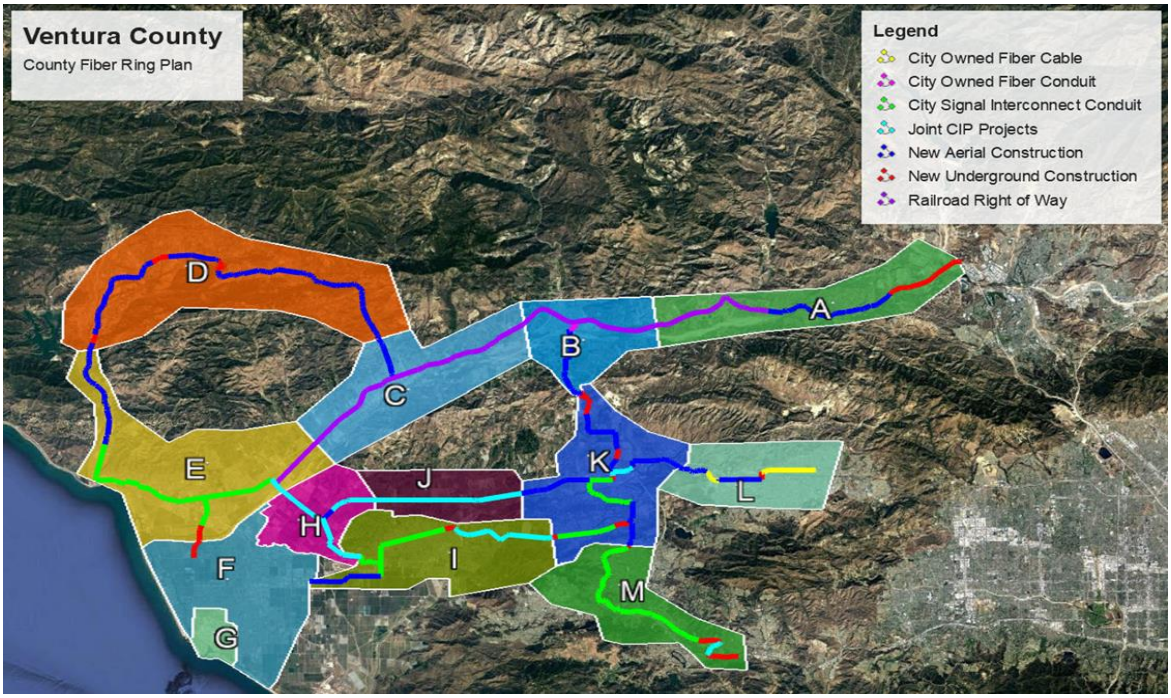
The proposed project will directly address this issue highlighted by the CEDS by laying the initial planning groundwork for additional capacity that will positively impact households, small businesses, corporations, and agricultural producers.

Project Overview:

The primary theme of this application is to achieve digital equity for the communities we will serve. The communities within this project are classified as minority-majority communities, with over 70% Hispanic populations and reaching as high as 83.8% Hispanic populations. These communities are: Saticoy, Santa Paula, El Rio, Piru and Fillmore.

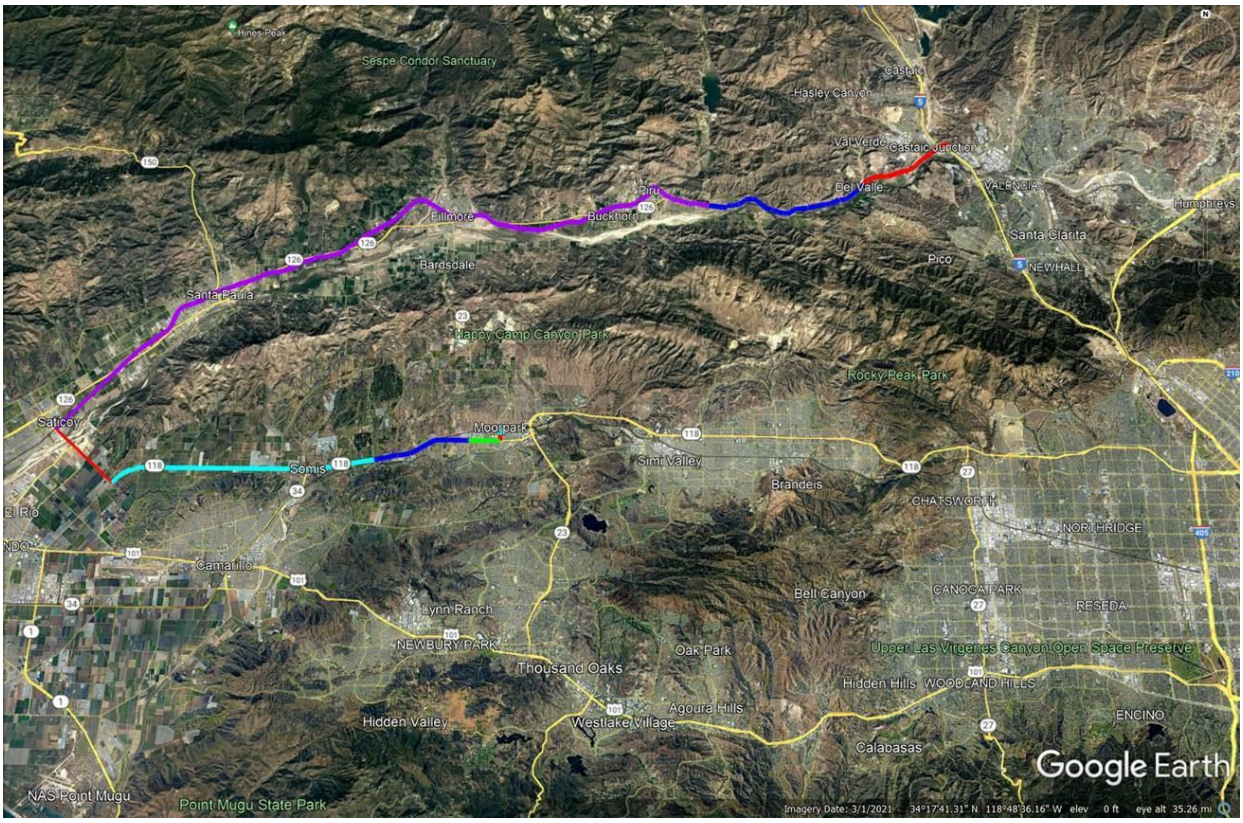
In this project, County of Ventura will engage in high level and detailed design for an eventual middle mile and last mile infrastructure build within the valley to provide faster broadband services, better connectivity, redundancy, and to stimulate economic development in the area. Providing redundancy for the network is also a key consideration to benefit emergency operations and the reduction of risk to the network shutting down during a natural disaster.

The project will develop a complete accounting of existing infrastructure, rights of way, easements and previously disturbed ground to develop estimates and implementation strategies that are lowest-cost and create the least environmental impact. Below is a rough picture of the various existing and proposed infrastructure for the area.



The county has already engaged many communities and utilized existing resources to map current infrastructure and assets available. A conceptual design has been completed for the areas in the above map.

With LATA funds, Ventura County will hire an engineering firm to complete design engineering, create a bill of materials, and assist with creating a RFP for construction bidding. This work will be done for sections A, B, C, and portions of E, then leading into sections H, J, and K. These areas encompass the first of four project phases that will involve construction along California State Route 126, connecting east to Santa Clarita. The route to be engineered is shown in the map below:



Scope of Work Outline:

1. Our organization in partnership with the engineering firm will undertake a comprehensive field validation and outside plan audit. As the High-Level Design is developed, the firm will determine the best running lines, infrastructure and locations where fiber should be constructed. They will identify fiber alignments, placements, structures, cable sizes and splice points in the network.

   The firm will work with the county to analyze any existing fiber backbone routes and determine the best construction strategy and methods. After these determinations have been made, the hired firm will complete 30% High-Level Design which will include geo-located data layers for the following:

   - Review of construction standards, policies and practices
   - Placement of new backbone cable
   - Right of way analysis
   - Sites to connect on the backbone
   - Laterals to each site
   - Interconnection with core data centers/utility sites

This work will assess four main items: backhaul, core fiber backbone, fiber laterals to key organizations, and fiber to the home.

Backhaul/Redundant Connections – A resilient County network will require at least two independent fiber paths to ensure that service is not interrupted due to technical issues, construction, accidental cable cuts, natural disasters/fire, or other unforeseen events.

Core Fiber Backbone - Includes all outside plant fiber assets, hut locations, facility locations and core network elements to light the network.

Fiber Laterals to Key Organizations – Includes all outside plant fiber assets and network elements to connect anchor institutions and facilities to the network.

Fiber To The Home Distribution/Access – An intent to provide dense fiber distribution to homes and businesses within each region, enabling individual users to connect to the network. FTTH distribution will include an assessment of outside plant fiber, distribution huts, splitter cabinets and other distribution elements to enable service drops that will connect end users to the network for fiber to the home broadband services.

As the engineering firm completes the High-Level Design, we will conduct a formal review with the firm with maps illustrating all components of the backbone overbuild. It will also include alignments, sites, laterals and connections to give the staff a first look at the preliminary design, provide feedback and give the engineering firm a chance to make any adjustments to running lines and other outside plant aspects of the network before moving into detailed engineering.

2. After High-Level Design, the engineering firm will complete 60% low level design. This begins with the onsite “fielding process”, in which the field team will conduct detailed walkouts of all routes and fiber lines. This process identifies features and attributes, constructability, hazards, and survey of existing infrastructure. GPS units will collect all fielding data to record features and upload them in real time to the design engineers of the firm. This enables the ability to expedite the design process in concert with the onsite field team. The fielding team will also provide make-ready analysis for the fiber overbuild. Our chosen engineering partner will look at the opportunities to over-lash existing cable vs new attachments for backbone fiber installation.

The engineering firm will then embark on a detailed engineering design, derived from survey data, and make necessary adjustments. The project will detail a route optimization process to assess optimal pathways for fiber routes, which will help the project to avoid potential construction barriers or delays during the fielding process. This process will allow the project to maximize value and efficiency for the final routes chosen. This low-level design process will allow the firm to determine fiber cable sizes, splicing diagrams, port assignments, terminations and final site connections for the new backbone. It will also provide preliminary bills of materials (BOMs) and cost estimates for the new network.

The Low-Level Design plans will be reviewed with the County, after which the first set of construction prints with detailed placement and routing will be created. This will also include plans and outlines for:

- Integration with existing fiber and conduit
- Preliminary fiber splice plans
- Cabinet layouts
- Pedestals
- Any other low-level outside plant infrastructure documentation.

The 60% review will give the County of Ventura a chance to provide feedback and to better understand the costs of construction. Variables such as budget, speed of deployment or route adjustments can be reconfigured at this time.

3. Final Design. This design process will incorporate any changes from the 60% Low Level Design into the final design. It will finalize all routing, alignments, separations, structure sizing and placement, cabinet placement, splice plans and other components of the design. This process will also identify all permits required, costs and timeframes to acquire the permits. The Final Design and Bid Package will provide the County of Ventura with the following:
    - All construction documents
    - City procurement requirements
    - Construction standards
    - Construction plans
    - Sequencing and schedules
    - Bills of Materials using unit costs and pay items for the release and RFP or invitation to bid.

The engineering partner will provide final QA/QC on all documents and conduct a formal review of the final deliverables with the County to determine if any changes need to be made before going to bid. The engineering firm will develop the final bid package for construction and provide the City with all content to support a competitive construction procurement. The engineering partner will provide design specifications, prints, pay items, units, and final documents, geodata files and map, incorporating in the County's existing procurement documents to create a final construction package for release to the market.

Budget:

The budget for this project includes the eight major categories associated with the design engineering services. Also included is a flat fee for project management of the LATA grant. This will be coordinated by the hired engineering firm.

Engineering Phase Service	Unit of Measurement	Unit Cost	Quantity	Total Cost
High-level design	Linear foot	$0.30	269,280	$80,784.00
Engineering design	Linear foot	$0.40	269,280	$107,712.00
Permitting	Linear foot	$0.20	269,280	$53,856.00
Final Construction Drawings	Linear foot	$0.20	269,280	$53,856.00
Staking/ Pre-Construction	Linear foot	$0.20	269,280	$53,856.00
As-Builts	Linear foot	$0.20	269,280	$53,856.00
PE Stamps	Hourly	$250	150	$37,500.00
Fielding Travel Costs	Flat amount (not to exceed)			$20,000.00
Project Management	Flat fee			$30,000.00

TOTAL	$491,420.00

Timeline:

Ventura will request for the engineering firm to complete this work in six months, so the County will be ready for last-mile and middle-mile grant opportunities on the horizon. As the exact award date is not known, the timeline has been delineated by month.

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
High-level design	X	X				
Engineering design		X	X			
Permitting				X		
Final Construction Drawings				X	X	
Professional Engineer Stamps				X	X	
Staking/ Pre-Construction					X	X
As-Builts					X	X
Project Management	X	X	X	X	X	X

What we hope to achieve with this project and future deployment of broadband facilities:

Equity: The primary theme of this application is to achieve digital equity for the communities we will serve. The communities within this project are classified as minority-majority communities, with over 70% Hispanic populations. According to recently published guidelines from the Presidential Administration, “Equity is defined as Economic development planning or implementation projects that advance equity across America through investments that directly

benefit 1) one or more traditionally underserved populations (PDF), including but not limited to women, Black, Latino, and Indigenous and Native American persons, Asian Americans, and Pacific Islanders…" With the implementation of this project, we are serving a large number of traditionally underserved persons.

Every community along this route is listed as a Socially Vulnerable Community. Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss. A rating of "High" is given to communities with a statistic of .75 or higher. All communities listed above are labeled as high-risk.

Lastly, more than one out of every three high school students in El Rio (35 percent) drop out, compared with a county average of 13 percent. In the county, the dropout rate fell slightly in the 1980s, but in El Rio it increased sharply, from 28 to 35 percent. If school performance is any indication of future mobility, the economic prospects of farm worker children are not promising. The last two decades have illustrated tremendous disparities in educational performance among Ventura County school districts, based on average statewide Academic Performance Index (API) rankings. The rankings range from a low of 1 to a high of 10. Oxnard schools, located in the county's agricultural heart, are at the other extreme, averaging 2.7 for elementary, 3.0 for middle, and 4.4 for high school. The average ranking for Oxnard high schools is 3.2. Rio's four elementary schools averaged 3.7, while the one Rio middle school had a ranking of 3.0.

Recovery & Resilience: Recovery and resilience is defined as "... projects that build economic resilience to and long-term recovery from economic shocks, like … a natural disaster, that may benefit from economic diversification-focused resilience."

Ventura County has experienced myriad natural disasters within the last few decades. The county received an Economic Development Administration award in the 90's for an earthquake that severely damaged local infrastructure. Wildfires have also become a more serious issue, with longer periods of hot, dry weather increasing the likelihood for a fire each summer.

The county does not currently have sufficient redundancy built into its broadband network to ensure protected coverage if part of the network is impacted by fire, flood or other natural disaster. This presents a serious risk to the community to respond to an incident, with reduced or even completely non-existent communications systems.

Technology-Based Economic Development: Broadband is essential to economic growth in the 21st century. This became starkly apparent over the past year as the coronavirus pandemic

deepened Americans' reliance on the internet. Families need the internet to access essential services, including education and health care, while small businesses and entrepreneurs need it to improve their operations and reach more customers to bring new economic opportunities to left-behind communities. In June 2020, 67 percent of workers in nonmetropolitan areas—particularly workers of color and low-wage workers—were unable to telework. Though some could not perform their jobs virtually, others simply lacked the technology to work from home. Reliable broadband presents a wide range of opportunities for economic growth in our county. Attracting workers with remote jobs has spillover effects that can create other jobs in the area. However, more than one-quarter of the residents in the communities we intend to serve have unreliable or limited internet access. This project would improve work-from-home capabilities by providing this infrastructure and service.

Environmentally-Sustainable Development: This project will likely have a tremendous impact on reducing emissions within Ventura County. According to the most recent CEDS, "While the county as a whole enjoys relatively high level incomes and quality jobs, there is a profound shortage of jobs in Ventura County for the population, resulting in the county being a daily exporter of jobs and talent." The ability to enable remote work can and will have a substantial impact on the need for a daily commute, which can reduce an individual worker's carbon footprint by up to 98%. This leads to cleaner air, less congested roads, and approximately $2000 per year in savings by both the employer and employee.

Outcome 1: Improved operational capacity for broadband in the county

While there are claims of high levels of service in Ventura County, there is an abundantly clear lack of options and service in communities with a large percentage of minorities. Each of the communities that will be served by this project are 70%+ Hispanic, while also having the highest rates of lack of internet service within the household. This is due to two issues. First, there is a lack of infrastructure within these communities for current internet service providers to affordably and profitably build out to the entire community. This is further exacerbated by the second issue, affordability for the consumer. The communities we intend to serve with this project are also higher poverty, with some reaching poverty rates in excess of 20%. Internet service providers are unwilling to build additional infrastructure to areas in which they are unsure the households will subscribe to internet services. Additionally, low-income households are often provided with entry-level internet options that are, at first, affordable. However, these plans often have data caps, leading to near unusable service once the data limit has been reach or they must purchase additional bandwidth.

This project will provide sound planning and engineering studies to support additional infrastructure, which will improve capacity and connectivity in these areas. Furthermore, the

introduction of this additional capacity will increase the level of competition in these neighborhoods, which will create price pressure and ultimately lead to a more affordable and better service for the end consumer.

Outcome 2: Redundancy to ensure reduction in outages and ability to respond to crises

Ventura County has experienced myriad natural disasters within the last few decades. The county does not currently have sufficient redundancy built into its broadband network to ensure protected coverage if part of the network is impacted by fire, flood or other natural disaster. This presents a serious risk to the community to respond to an incident, with reduced or even completely non-existent communications systems.

The project will ensure redundancy to ensure residents are able to continuously share information in the event of a major natural disaster.

Outcome 3: Improved attractiveness of the county for businesses

Broadband is essential to economic growth in the 21st century. This became starkly apparent over the past year as the coronavirus pandemic deepened Americans' reliance on the internet. Families need the internet to access essential services, including education and health care, while small businesses and entrepreneurs need it to improve their operations and reach more customers to bring new economic opportunities to left-behind communities.

Though many schools and offices have reopened, the pandemic has illustrated not only that broadband internet access at home will remain an indispensable utility in the future, but also that it's an equity issue.

Outcome 4: Improved work-from-home capabilities

In June 2020, 67 percent of workers in nonmetropolitan areas—particularly workers of color and low-wage workers—were unable to telework. Though some could not perform their jobs virtually, others simply lacked the technology to work from home. Reliable broadband presents a wide range of opportunities for economic growth in our county. Attracting workers with remote jobs has spillover effects that can create other jobs in the area. However, more than one-quarter of the residents in the communities we intend to serve have unreliable or limited internet access.

This project would improve work-from-home capabilities by providing this infrastructure and service.

Outcome 5: Reduce the digital divide for minority-majority communities

A January 2022 extension of the CEDS report delivers a strong statement on how improved broadband infrastructure can provide several benefits to the citizens of Ventura County. This report was performed for the entire SCAG Region, and has a dedicated section focused on Ventura County for the "depiction of existing digital access within six counties of the region and across selected demographic indicators in each zip code."

A majority of the work will be performed in zip codes 93015 and 93060. These two zip codes have the highest percentage of households without a computer or internet in the county. Moreso, the towns and cities within these zip codes are "minority majority" communities, with 70%+ Hispanic populations in each of the census-designated towns and cities along the corridor.

The project will predominantly impact the communities along route 126 in Ventura County, from Saticoy to Santa Clarita. The endeavor will positively impact several opportunity zones (Census Tracts 06111000304, 06111000600, and 06111001302) as well as a few labeled Socially Vulnerable Areas (designation provided by the USDA and CDC).

This project has stimulated collaboration from various organizations within local government and the private sector to make this a success. Letters of support are provided with this application to demonstrate demand for resilient connectivity in the community and support for this project to take place.

Geography

This project will take place in Ventura County. The county's landmass ranges in elevation from the coast (sea level) to 8,831 feet. The diversity of the geography is notable, with 42 miles of coastline, dense forests at high elevation, and fertile valleys. The project will be located within the low-lying valley following route 126 between Saticoy and Santa Clarita. Maps and shapefiles are included in this application for geographic reference.