

Humboldt County Association of Governments

HCAOG ☼ Regional Transportation Plan

VROOM ☼ 2022-2042

Variety in Rural Options of Mobility

This plan is available online at hcaog.net

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- *McKinleyville Transit Study* (2021)
- *Mobility-on-Demand Strategic Development Plan* (2020)
- *HCAOG Public Participation Plan* (2018)
- *Humboldt Regional Bicycle Plan* (2018)
- *Humboldt County Transit Development Plan* (2017 or most current)
- *Humboldt Regional Trails Master Plan* (2010)
- *Humboldt County Regional Pedestrian Plan* (2008)

LIST OF ACRONYMS

5310	Federal Transit Administration grant program (mass transportation needs for elderly persons and persons with disabilities)
5311, 5311 (f)	Federal Transit Administration grant program (for public transit in non-urbanized areas, i.e., population under 50,000)
AAC	Aviation Advisory Committee of the County of Humboldt
ACV	Airport code for California Redwood Coast–Humboldt County Airport
A&MRTS	Arcata and Mad River Transit System
AB 32	Assembly Bill 32: California Global Warming Solutions Act of 2006
AIP	Airport Improvement Program
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ARRA	American Recovery and Reinvestment Act
ATP	Active Transportation Program (A state funding program)
BIA	Bureau of Indian Affairs
BLRTS	Blue Lake Rancheria Transit System
CALCOG	California Association of Councils of Governments
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CARB	California Air Resource Board
CBO	Congressional Budget Office
CCCC	California Climate Change Center
CCT	California Coastal trail
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan
CO_2	Carbon Dioxide (a greenhouse gas)
CPUC	California Public Utilities Commission
CRRSA Act	Coronavirus Response and Relief Supplemental Appropriations
CTC	California Transportation Commission
CTP	California Transportation Plan
DAR/DAL	Dial-a-ride, Dial-a-lift
DOT	Department of Transportation
EEM	Environmental Enhancement & Mitigation program
ETS	Eureka Transit Service
EV	Electric Vehicle
FTZ	Foreign Trade Zone
FAA	Federal Aviation Administration
FAST Act	Fixing America's Surface Transportation Act
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration (under the U.S. Department of Transportation)
FSTIP	Federal Statewide Transportation Improvement Program
FTIP	Federal Transportation Improvement Program
FTA	Federal Transit Administration (under the U.S. Department of Transportation)
FTS	Fortuna Transit System
FY	Fiscal Year
GASNA	General Aviation System Needs Assessment
GHG	Greenhouse Gas
NCCTC	North Coast Tribal Transportation Commission
HBMWD	Humboldt Bay Municipal Water District
HCAOG	Humboldt County Association of Governments

HSU	Humboldt State University
HTA	Humboldt Transit Authority
HTF	Highway Trust Fund
HVTC	Hoopa Valley Tribal Council
ISTEA	Intermodal Surface Transportation Efficiency Act
ITIP	Interregional Transportation Improvement Program
ITS	Intelligent Transportation System
K/T NeT	Klamath Trinity Non-emergency Transportation
KPRA	Kingpin-to-rear-axle
LED	Light-Emitting Diode
LOS	Level of Service
LTF	Local Transportation Fund (Enacted by the Transportation Development Act (TDA).
LTS	Level of Traffic Stress
MAP-21	Moving Ahead for Progress in the 21st Century (Went into effect FY 2013-14.)
MKRCTP	Middle Klamath River Community Transportation Plan
MOA/MOU	Memorandum of Agreeement/Understanding
NCRA	North Coast Railroad Authority
NPIAS	National Plan of Integrated Airport Systems
NOx	Nitrous Oxide (an air pollutant)
NZEV	Near Zero Emission Vehicle
OA	Operational Area
OES	State Office of Emergency Services
OWP	Overall Work Program
PAC	Policy Advisory Committee (HCAOG committee)
PCI	Pavement Condition Index
PDT	Project Delivery Team
PM	Particulate Matter (an air pollutant)
PMS	Pavement Management System
PPM	Planning, Programming and Monitoring state funding
PSA	Public Service Announcement
PSR	Project Study Report
PTMISEA	Public Transportation Modernization, Improvement, and Service Enhancement Account (also called Prop 1B)
RCEA	Redwood Coast Energy Authority
RCT	Redwood Coast Transit
RPA	Regional Planning Agency
RSTP	Regional Surface Transportation Program
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RTS	Redwood Transit System
SAFE	Service Authority for Freeway Emergencies
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (federal transportation act 2005--2012)
SB	Senate Bill
SB 1	Road Repair and Accountability Act of 2017
SB 69	North Coast Railroad Authority and Great Redwood Trail Agency of 2020
SB 375	Sustainable Communities and Climate Protection Act of 2008
SB 1029	North Coast Railroad Authority Closure and Transition to Trails Act of 2021
SHA	State Highway Account
SHI	Southern Humboldt Intercity transit system
SLR	Sea-level rise
SPR	State Planning and Research
SR	State Route

SR2S	Safe Routes to School (State of California's program)
SRTS	The former federal Safe Routes to School program
SST Targets	Safe & Sustainable Transportation Targets
SSTAC	Social Service Transportation Advisory Council (HCAOG committee)
STAA	Surface Transportation Assistance Act
STAF, STA Fund	State Transit Assistance Fund
STIP	State Transportation Improvement Program
TAC	Technical Advisory Committee (HCAOG committee)
TAP	Transportation Alternatives Program
TAZ	Traffic Analysis Zone
TCTC	Trinity County Transportation Commission
TDA	Transportation Development Act
TDM	Transportation Demand Management
TDP	Transit Development Plan
TE	Transportation Enhancement (Federal, enacted by SAFETEA-LU)
TEA	Transportation Equity Act
TEK	Traditional Ecological Knowledge
TIGER	Transportation Investment Generating Economic Recovery
TIRCP	Transit and Intercity Rail Capital Program
TTIP	Tribal Transportation Improvement Program
TSM	Transportation Systems Management
TTPA	Tribal Transportation Programmatic Agreement
UTN	Unmet Transit Needs
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound (an air pollutant)
WSP	Wayfinding System Project
YTTS	Yurok Tribal Transit Service
ZEV	Zero Emission Vehicle

1. INTRODUCTION

Our region's transportation infrastructure impacts every person who lives here, every visitor who travels here, and all the goods and services that make their way to us. It connects us all. In terms of dollars, the transportation system is our community's biggest infrastructure investment.

HCAOG's Regional Transportation Plan charts a course to provide *Variety in Rural Options of Mobility* ("*VROOM*" for short). Mobility means the ability to access everyday destinations in a manner that is convenient, affordable, and safe. The RTP update, *VROOM 2022-2042,* is a long-range planning document covering a 20-year planning horizon.

VROOM 2022-2042 begins to address transportation's interconnected challenges of climate change, land use, safety, and equity in a way that is both tailored to Humboldt County and consistent with the bold targets set at the state and federal levels. The transportation vision in *VROOM 2022-2042* was crafted in partnership with the community and includes plans to reduce vehicle pollution, to promote the development of housing and jobs in walkable neighborhoods near transit, and to build out a complete network of bike and pedestrian paths to safely engage in a healthy lifestyle.

CLIMATE CHANGE



VROOM brings to the fore strategies for meaningfully reducing the transportation sectors' levels of greenhouse gas emissions. Achieving a substantial mode shift to more walking, biking and transit trips is a pillar for climate action in Humboldt County. HCAOG also supports the shift to zero-emission vehicles (ZEVs). *VROOM* contains policies to support ZEV fueling infrastructure and to encourage the shift to zero-emission transit vehicles, school buses, and municipal fleets.

HOUSING & VIBRANT NEIGHBORHOODS



Strategies to reduce vehicle miles travelled (VMT) are a key component of a sustainable transportation system. One of the most powerful ways to shift how people move around is to focus on where they live in relation to everyday destinations. In concert with the complete streets policies that encourage walking, biking, and transit , HCAOG supports effective land use policies to create places with a mix of uses and pleasant, vibrant streetscapes.

SAFETY & HEALTH



Every day, 10 people die on California's transportation system. At least two of those fatalities involve our most vulnerable roadway users—pedestrians or bicyclists (Caltrans 2020). In Humboldt, there have been 71 deaths reported from car collisions in just the last four years. HCAOG therefore adopts "Vision Zero," an initiative to reduce roadway fatalities to zero, with a focus on the crisis of pedestrians and bicyclists hit by cars. We also know that active transportation leads to better health outcomes for people, including less stress, less risk for chronic disease, and less obesity.

EQUITY



Transportation equity means all people benefit equally from transportation investments and that no group is disproportionately impacted negatively by the transportation system. HCAOG is committed to pursuing the actions, training, funding, and partnerships needed to ensure that equity efforts are not peripheral but embedded in our work and decisions.

GOAL & OBJECTIVES

RTP Overall Goal: HCAOG's goal is for Humboldt County to have a carbon-neutral, multi-modal transportation system that is comprehensive, safe, sustainable, and equitable so that people in the region can travel and move goods by the modes that best suit the individual or business/industry, and society at large.

Overall Objective: Program all transportation funds based on multi-modal transportation goals and objectives, and needs and priorities as established in the Regional Transportation Plan.

PRIORITY OBJECTIVES

- Active Transportation Mode Share/Complete Streets – Increase multi-modal mobility, balanced mode shares, and/or access.
- Economic Vitality – Support the local or regional economy by improving goods movement and transportation access, efficiency, and cost-effectiveness;
- Efficient & Viable Transportation System – Make the transportation system operate more efficiently
- Environmental Stewardship & Climate Protection – Enhance the performance of the transportation system while protecting and enhancing the natural environment.
- Equitable & Sustainable Use of Resources – Advocate for costs and benefits (financial, environmental, health, and social) to be shared fairly.
- Safety and Health – Increase safety for all roadway users.

See Chapter 2 for full definitions of the RTP goal and objectives.

HCAOG is a joint powers authority (JPA) comprising the County of Humboldt and the seven incorporated cities, each with a seat on the HCAOG Board of Directors. HCAOG's aim is to facilitate and further develop convenient transportation options, including connectivity to complete streets, trails, transit, transit-oriented development, bicycling, walking, on-demand services such as ride-sharing and bike-sharing, as well as freight transport and emergency transportation.

SAFE AND SUSTAINABLE TRANSPORTATION TARGETS

In late 2020, community members urged HCAOG to identify more meaningful and proactive actions to address climate change. The HCAOG Board responded by forming an ad-hoc Regional Transportation Plan (RTP) Greenhouse Gas Targets Committee to draft emissions-reduction targets to incorporate into *VROOM*. The committee, along with public stakeholders who participated actively, drafted targets and performance measures. The Board approved the committee's recommendations, which are now *VROOM*'s Safe and Sustainable Transportation (SST) Targets. (The full table of targets is in Chapter 2, Renewing Our Communities.) HCAOG will apply the SST Targets to measure the progress that *VROOM's* projects and programs make towards regional goals to:

- reduce regional VMT,
- increase transit ridership,
- transition to zero-emission fleets,
- improve accessibility through better land use,
- achieve zero pedestrian and bicyclist fatalities, and
- increase active transportation education.

PLANNING ASSUMPTIONS

- **County Population** – The population will grow by approximately 1% and the median age of the population will continue to increase as the population grows older. Slow growth has been consistent in Humboldt County for decades. However, within the 20-year timeframe of this RTP, there may be several factors that drive population growth beyond the typical 1%. This includes Humboldt State University's proposed designation as a polytechnic university, the potential influx of climate refugees as other areas of the state and nation become inhospitably hotter and dryer, the possibility of an influx of remote workers, and the potential development of an off-shore wind energy industry spurring development on Humboldt Bay. The impacts of these combined factors are difficult to quantify at this time and will be reevaluated with every four-year RTP update.
- **Travel Mode** – Car trips will stubbornly remain the predominant mode of transportation for the majority of residents. Bicycle travel will increase in areas with dedicated bike facilities. The number of actual bicycle, pedestrian, and transit trips will continue to be below latent demand. People will continue to request more transit services and multi-modal trails. Demand will increase persistently for mobility-on-demand and shared-use mobility options (e.g. bike share, scooter share, ride hailing).
- **Planning Requirements** – State and federal legislation, rules, or executive orders will continue to pressure municipalities to reduce greenhouse gas emissions associated with the transportation sector.
- **Energy & Fuel Sources** – The use of fossil fuels for electricity and gas will decline. Investments in local renewable power and zero-emission charging infrastructure will spur the adoption of ZEVs.
- **Goods Movement** – Trucking will remain the primary mode of shipping goods in and out of Humboldt County, and fleets will progressively transition to near-ZEVs (NZEVs) and ZEVs. Automated trucking and drones will be utilized to move goods within the timeframe of this plan. Humboldt Bay port will concentrate on bulk and break bulk products. Rail service is not planned (north/south or east/west) within the RTP's 20-year timeframe.
- **Technology** – Internet-based apps and Big Data will become more widely used among more mode options and operations. People with mobile devices will enjoy greater transportation options and conveniences than people without mobile devices unless equity factors are included. More bike/ped data (modeling, GIS), and transit technologies (route planning, integrated payment systems) will be employed.
- **Extreme Weather** – The region will see increased frequency and severity of weather events. Impacts from high temperatures, fire, drought, flood, sea-level rise, high winds, and 100-year rain events will strain infrastructure and increase needs for both maintenance and emergency repairs.

ACCOMPLISHMENTS SINCE THE 2017 *VROOM*

HCAOG engaged in many projects since the last RTP update in 2017. Beyond HCAOG's standard duties, a short list of highlights by category includes:

- **Active Transportation** – As an active member of the Bike Month Humboldt Coalition: planned Bike Month Humboldt annually, created the Bike-Friendly Business program, and co-created the Humboldt Bike Challenge; updated the Humboldt Bay Bicycle Map, Regional Bicycle Plan (2018), and Safe Routes to School Prioritization Tool (2020); created a web-based Bicycle Map; participated in the Humboldt Trails

Summit; supported the Great Redwood Trail; and joined the Mayor of Eureka's Task Force on Traffic Safety.

- **Transit** – Implemented "Transit Takes Off" promotional project which funded later service on Saturdays, free rides on Saturday evenings, and free bus passes for a limited time; completed the *Eureka Transit Line Study* (2018), the *Mobility-on-Demand Strategic Development Plan* (2020), and the *McKinleyville Transit Study* (2021).



- **Regional Planning** – Supported studies on sea-level rise; collaborated with jurisdictions on Climate Action Plans; completed the sixth cycle Regional Housing Needs Allocation (RHNA) Plan (2019); and partnered with Caltrans District 1 and the City of Eureka to complete the *Eureka Broadway Multimodal Corridor Plan* (2021).

- **COVID-19 pandemic response** – The impact of the pandemic contributed to a dramatic reduction in transit ridership, changed commuting patterns in ways still unquantified, and led to volatility in construction costs and uncertainty in local sales tax revenues. HCAOG assisted in distributing millions of dollars in Federal coronavirus stimulus aid to transit agencies, jurisdictions and tribes.

The 2017 RTP highlighted two projects of regional importance: completing the Humboldt Bay Trail between Arcata and Eureka, and completing the 101 Safety Corridor Interchange. Both projects have progressed since 2017 (e.g., additional funding secured, mitigation projects in the works, and necessary permits obtained) and they remain regional priorities to complete in the short-term (within 10 years or less). Additionally, in *VROOM 2022-2042*, HCAOG is renewing its commitment to transportation safety with emphasizing a focused regional priority to reduce traffic-related fatalities on the Broadway Corridor in Eureka, with the Vision Zero goal of eliminating traffic-related deaths and serious injuries. Priorities for the Broadway Corridor include both short-term safety enhancements and long-term multimodal improvements.

Table *Intro*-1 lists the transportation projects in *VROOM* 2017's Action Plans that HCAOG member jurisdictions have since completed.

Table *Intro*-1. **Regional Transportation Plan Projects Completed Since 2017**

Jurisdiction	Projects Completed
City of Eureka	Waterfront Drive: Phase 2 Connection from G Street to J Street (Complete Streets Action Plan)
City of Blue Lake	Annie and Mary Trail: Class I rail-trail with sidewalks, bridge and traffic calming; included education to promote active transportation (Commuter Trails Action Plan)
City of Fortuna	Complete Streets Action Plan projects: • Redwood Way: Pedestrian and bike lane improvements from Fortuna Blvd to Rohnerville Road • Newburg Road: New sidewalk, bike lanes and school entry improvements along Lawndale Drive, Summer Street, 2nd Ave, and Orchard Lane
City of Rio Dell	Davis Street, Wildwood Ave: Safe Routes to School traffic calming, including curb extensions, crosswalks and sidewalks, Class II/III bike striping and signage; and lighted pedestrian crossing (Complete Streets Action Plan)
County of Humboldt	Aviation Action Plan projects: • Garberville Airport runway resurfaced; • Aircraft Rescue and Fire Fighting building constructed at Redwood Coast Airport; • *Airport Land Use Compatibility Plan* (ALUCP) updated and adopted (4/13/21).

WHAT IS THE REGIONAL TRANSPORTATION PLAN?

VROOM 2022-2042 is based on the unique needs and characteristics of the region and it helps shape the region's economy, environment, and social future. An important policy document, the RTP serves both to communicate the regional vision and transportation priorities to state and federal government, and to allow the federal and state governments to track progress toward federal and state goals. A critical component of the planning process is to engage a broad spectrum of the community, including people with transportation disadvantages. Documentation of the public outreach process, including a list of stakeholders and findings from our bi-lingual survey, can be found in Chapter 2 and Appendix A.

VROOM should not be considered in isolation for HCAOG's long-term planning goals and efforts. Other HCAOG plans are also relevant for fostering HCAOG's vision of a comprehensive, coordinated, sustainable, and balanced multi-modal transportation system. HCAOG's adopted plans that are related to *VROOM* and incorporated by reference include (but are not limited to):

Recent plans:

- *Coordinated Public Transit–Human Services Plan* (2021)
- *Mobility-on-Demand Strategic Development Plan* (2020)
- *Humboldt County Regional Housing Needs Allocation Plan* (2019)
- *Humboldt Regional Bike Plan* (2018)
- *Humboldt County Transit Development Plan 2017-2022* (2018)
- *Regional Transit Marketing and Unified Branding Plan (2018)*

Older plans:

- *Countywide Bicycle Parking Guidelines* and *Bike Parking Sourcebook* (2015)
- *imagine humboldt!* (2013)
- *Humboldt County Regional Trails Master Plan* (2010)
- *Humboldt County Regional Pedestrian Plan* (2008)

PLAN PURPOSE

Under its authority as the Regional Transportation Planning Agency (RTPA) for Humboldt County, HCAOG is required to adopt and submit an updated Regional Transportation Plan (RTP) to the California Transportation Commission (CTC) and Caltrans every four years. HCAOG has updated the RTP in conformance with the CTC's adopted RTP Guidelines, and pursuant to state legislation (Government Code §65080 et seq.), and federal legislation (U.S. Code, Title 23, §134 and §135 et seq.).

VROOM is intended to fulfill the following purpose of an RTP: "encourage and promote the safe and efficient management, operation and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people." (RTP Guidelines 2017). In addition, *VROOM* serves to:

- Assess the current modes of transportation and the potential of new travel and goods movement options within the region;
- Identify and document specific actions necessary to address the region's needs for mobility, accessibility, and goods movement for the next 20 years;

- Identify beneficial health outcomes resulting from increased active transportation;
- Identify objective criteria for measuring the performance of the transportation system;
- Identify equity priority communities and establish a prioritization tool for use by local jurisdictions when considering where transportation projects are funded; and
- Promote consistency between the California Transportation Plan, the regional transportation plan and other transportation and/or land use plans developed by cities, counties, districts, private organizations, tribal governments, and state and federal agencies.

Projects must be consistent with adopted RTPs in order to qualify for funding in the State Transportation Improvement Program (STIP) and be included in a Regional Transportation Improvement Program (RTIP) or the Interregional Transportation Improvement Program (ITIP).

RELATED PLANS

The RTP is consistent with the following plans.

CALTRANS DISTRICT 1 CLIMATE CHANGE VULNERABILITY ASSESSMENT AND PILOT STUDY (2014)

The Final Report (December 2014) presents the results of the Caltrans District 1 Climate Change Pilot Study (D1CCPS). Through the study, Caltrans created a process for evaluating the vulnerability of state-owned transportation assets in District 1 due to various climate change factors; the report documents a tool to assess adaptation strategies for vulnerable assets. The project was part of the FHWA Climate Resilience Pilot.

CALIFORNIA TRANSPORTATION PLAN 2050 (2020)

The CTP 2050 provides a statewide, long-range policy framework to meet our future mobility needs and reduce greenhouse gas emissions. The CTP 2050 envisions a safe, sustainable, and globally competitive transportation system, providing reliable and efficient mobility and accessibility for people, goods, and services while meeting greenhouse gas emission reduction goals and preserving community character.

CALIFORNIA TRANSPORTATION PLAN 2050

The CTP 2050 unites the State's individual modal plans:

1. Interregional Transportation Strategic Plan
2. California Freight Mobility Plan
3. California State Rail Plan
4. California Aviation System Plan
5. Statewide Transit Strategic Plan
6. Toward an Active California-State Bicycle and Pedestrian Plan

CALIFORNIA CLIMATE ACTION PLAN FOR TRANSPORTATION

The California State Transportation Agency (CalSTA) plan details how the State recommends investing billions of discretionary transportation dollars annually to , to reach the State's ambitious climate goals while supporting public health, safety, and equity. CAPTI builds on executive orders signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing greenhouse gas (GHG) emissions in transportation, which account for more than 40 percent of all emissions. CAPTI aims to align the State's climate goals with transportation spending by: strategically directing discretionary transportation investments in support of housing production near available jobs; encouraging people to shift from cars to other modes of transportation; funding active transportation options such as walking, transit, and biking; and mitigating increases in transportation costs for Californians with limited income.

CALTRANS ACTIVE TRANSPORTATION PLAN FOR DISTRICT 1 (2021)

The Caltrans Active Transportation Plan for District 1 (CAT Plan) is part of a comprehensive effort to identify locations with bicycle and pedestrian needs in each Caltrans district across California. Caltrans staff will use the data and analysis in the plan to address active transportation needs along and across the State highway system (SHS) in future construction or maintenance projects. The CAT Plan identifies challenges people face in walking, bicycling, and reaching transit on the SHS, which provides critical transportation routes in towns and cities across California. The CAT Plan identifies gaps and barriers on the SHS and recommends priorities where needs exist. A companion online Story Map has interactive maps that highlight the pedestrian and bicycling issues, needs, and opportunities described in the CAT Plan.

CALTRANS' SMART MOBILITY FRAMEWORK GUIDE (2020)

Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade* (commonly referred to as the Smart Mobility Framework) was one of DOT's early actions/plans to focus on sustainability for transportation planning and investment: "It is about changing the way the transportation system performs so that negative environmental and social impacts are reduced, and options for people and businesses are increased."
The Smart Mobility strategies emphasize convenient and safe multimodal travel, speed suitability, accessibility, management of the circulation network, and efficient use of land.

Caltrans updated the 2010 framework with the Smart Mobility Framework (SMF) Guide (2020), completed and posted online in November 2021. Caltrans uses this Guide internally; for example, Caltrans is now implementing complete streets throughout Caltrans. The SMF Guide is a starting point for those working to implement multimodal and sustainable transportation strategies in California.

CALIFORNIA STATE WILDLIFE ACTION PLAN (2015)

Each State Wildlife Action Plan (SWAP), mandated by Congress, must examine the health of wildlife and prescribe actions both to conserve wildlife before they become rarer, and to conserve vital habitat before it becomes costlier to protect. The California Department of Fish & Wildlife (CDFW) prepares the SWAP, identifying "species of greatest conservation need" and actions to protect them. The SWAP 2015 update includes companion plans for nine sectors that could have significant influences on sensitive natural ecosystems, including the transportation sector. The SWAP's *Transportation Planning Companion Plan* suggests

> "opportunities for the transportation planning sector to collaborate and incorporate natural and wildlife resource conservation in project planning:
>
> - engaging in natural community conservation planning (NCCP);
> - implementing low-impact development projects that limit impacts on large habitat areas and species;
> - developing and implementing best management practices (BMPs) for water quality and roadways;
> - replacing culverts and retrofitting bridges to allow fish passage and wildlife movement;
> - describing transportation development stressors on wildlife and habitats (e.g., species composition changes and incidental losses [road kills]);
> - prioritizing large habitat preservation and locating future construction along existing transportation corridors;
> - avoiding habitat/population fragmentation and invasive species expansion;
> - supporting compact infill and redevelopment in existing underutilized urban areas so communities have no need to sprawl into greenfield or agriculture lands;
> - analyzing completed transportation projects that have reduced wildlife resource impacts for lessons learned (California Department of Fish and Game, 2005)" (CDFW 2016).

The *VROOM*'s "Environmental Stewardship" objective is consistent with the California SWAP, and HCAOG supports transportation planning and projects that follow these resource conservation objectives. The RTP's Program Environmental Impact Report (EIR) identifies species of greatest conservation need and their habitat, as well as historic sites and cultural resources, that could potentially be vulnerable to impacts from proposed transportation projects in Humboldt County. The mitigation measures in *VROOM*'s Program EIR include actions suggested in the *Transportation Planning Companion Plan*. Local jurisdictions will conduct subsequent project-level environmental assessments, per CEQA and/or NEPA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

HCAOG prepared a new Program Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA) for the 2014 RTP update. For the 2017 update, HCAOG certified an addendum to the Program EIR. For the current update, *VROOM 2022-2042,* HCAOG assessed whether the

proposed changes to the RTP would have potentially significant environmental impacts and determined that the updates did not change the nature or scope from the 2017 version, and therefore concluded that an Addendum to the EIR was again appropriate. The "Addendum #2 to the Final EIR prepared for the Humboldt Regional Transportation Plan 2013-2014 Update" is available in Appendix C.

VROOM 2022-2042 proposes policies and actions within the scope and intent as that envisioned in the Final EIR. The current environmental impact assessment concludes that the proposed plan update, *VROOM 2022-2042*, (1) is not anticipated to result in new significant impacts or a substantial increase in the severity of previously identified significant effects; and (2) would not require major revisions to the previously certified FEIR; therefore, impacts are deemed consistent with those in the FEIR. The proposed *VROOM 2022-2042* plan will not result in more significant impacts; neither changes to nor new mitigation measures are required.

See Appendix C for the environmental document.

REFERENCES

CITATIONS

Caltrans 2020 "2020 Caltrans Annual Accomplishments Report" (https://dot.ca.gov/-/media/dot-media/programs/risk-strategic-management/documents/ct-2020-annual-report-a11y.pdf, accessed August 23, 2021.)

CDFW 2016 (California Department of Fish & Wildlife) *Transportation Planning Companion Plan*. Prepared for CDFW by Blue Earth Consultants. (December 2016)

2. RENEWING OUR COMMUNITIES

COMMUNITIES – FROM LOCAL TO GLOBAL



Transportation is a fundamental element of building communities. It shapes the physical outlines and intersections of the place. It is a factor in how large your local community is. It is the means of building bridges, figuratively and literally, to connect you to other communities. It is a deciding factor in what communities you can visit, near and far.

Throughout history, transportation inventions and transport innovations have certainly shaped communities and affected daily life. For instance, the wheel. Transport by horse or donkey, camel or llama, water buffalo or elephant has shaped communities. As have the canoe, dugout, and raft. The steamboat, airplane, and the cargo ship. The train, cable car, trolley, subway. The bicycle. And, of course, the automobile, truck, bus, and scooter.

WHY RENEW?

Global Climate Change/Crisis



Transportation has always affected communities. Today, the global impact of transportation is undeniable. After a century or so of building communities and economies around fossil-fuel-powered automobiles and cargo trucks, ships, trains, and airplanes, we see a global climate crisis induced by greenhouse gases. The transportation sector generated 29% of U.S. GHG emissions in 2019, and 4% of 2010 global greenhouse gas emissions. Eighty percent of total U.S. emissions were from carbon dioxide ($C0_2$) (U.S. EPA, 2021).

The global climate crisis requires that we make swift and fundamental changes to **renew our transportation system**. Even if prudence and preservation did not warrant it, California State laws and federal policies require it.

Fossil fuel's leading role in global climate change is a solid reason to renew today's transportation system, but it's not the only reason. As it turns out, car-centric communities burden residents with impacts most of them don't want, such as high land costs, high costs for housing and transportation, high vehicle speeds, high crash rates, and a presumption and preponderance of car commuting.

Land Consequences

Car-centric communities throughout the U.S., including in Humboldt County, have also ended up disrupting and sometimes destroying opportunities for more nimble transportation choices like walking, bicycling, and comprehensive public transit. So much land is taken up for roadways and highways to accommodate cars, high travel speeds, and parking, that distances from one place to another stretch too far to walk, bike, or provide frequent bus service.

> Road traffic crashes are a leading cause of death in the United States for people aged 1–54, and they are the leading cause of nonnatural death for U.S. citizens residing or traveling abroad.
>
> *— CDC, 2021*

The last century's transportation-land use patterns are not merely travel inconveniences for residents. The costs of this transportation system hit city and county budgets hard. For one, land dedicated to roads, highways, and parking spaces do not generate enough, if any, revenues to pay for perpetually maintaining them. What's more, land dedicated to roadways and parking is land lost to uses that *do* generate revenue—businesses, farmland, housing, art studios, offices—or uses that build other community assets, such as parks, schools, hospitals, open space, greenspace, and coastal bluffs.

Health Consequences

Another cost that residents and local governments pay, individually and collectively, is diminished public health. The current transportation system does not encourage people to use active transportation modes, which could help combat rates of obesity, high blood pressure, and other illnesses. (Over 30% of adults in Humboldt County are obese, according to the *2018 County Community Health Assessment*.)

Also, even when driving the posted speed limit (with or without the common practice of driving 5+mph over the limit), drivers can, and do, cause lethal collisions. Just since the HCAOG Board last adopted *VROOM,* in December 2017, 71 people were killed and 2,211 were injured in car collisions (reported) in Humboldt County.

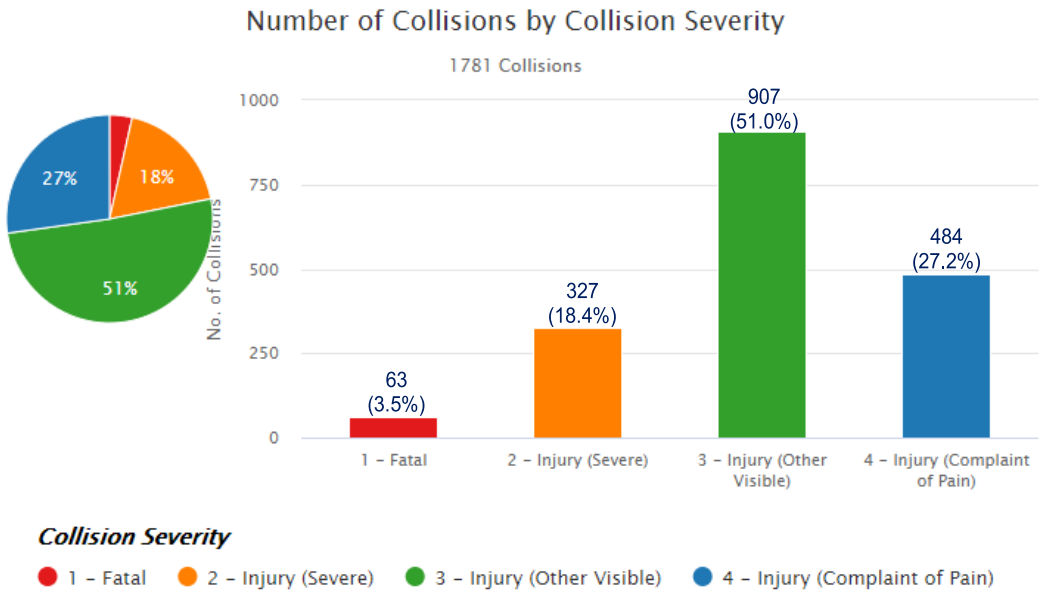


Figure *Renew*-1. **Collisions in Humboldt County (All) 12/14/2017 – 12/31/2020**

Effects on Comfort & Aesthetics & Play

Streetscapes designed at a pedestrian scale can feel more comfortable and inviting because they are built to human-scale proportions, speeds, and distances. You don't need to go to Disneyland or Venice (Italy) to know the different feel of famous pedestrian-friendly streets. You could have experienced it when you walked around the Farmers Markets, or around Eureka Friday Night Markets, or one or another of Humboldt's summer street fairs. Although these examples are bustling because, in part, they don't happen every day, one should not discount the impact that pedestrian-friendly design has on attracting people to places and making them feel more safe.



Peripheral vision at 15 mph



Peripheral vision at 30 mph

Slowing vehicle speeds is another factor proven to increase the safety and useability of streets. The higher the vehicle speed, the more space is required to maintain some safety parameters for drivers and passengers. Even relatively moderate car speeds of 30-35 mph make many non-driving uses unacceptable on or near the roadway. Slow speeds, and less cars even more so, can create inviting streets where children can play, people can walk their dogs and push baby strollers, seniors can stroll or sit on a bench, art can be displayed and contemplated, and more.

And it's not only about comfort, safety, peaches, hot dogs, frybread, and samba parades:

> Pedestrian-friendly streetscape design is associated with increased social interaction and civic trust. A cross-sectional analysis conducted in Portland, Oregon, found front porches and sidewalks were positively associated with interaction, trust, and reciprocity among neighbors (Center for Active Design, 2018).

People-oriented street design is correlated with livable public spaces. (Refer to *VROOM's* Land Use-Transportation Element, and Global Climate Crisis Element for further discussion of these issues.)

> "Studies have found that people will typically not perceive a sidewalk on a high-speed, multi-lane road as walkable. On the other hand, a comfortable, tree-lined sidewalk along a bustling main street can entice pedestrian use."
>
> *— Center for Active Design, 2018*

RENEW WHAT?

Does the tail wag the dog? It might blithely be said that, over the past few generations, automobile transportation has propelled communities instead of the other way around. Unfortunately, this transportation paradigm seems to have driven communities down a dead-end road to unintended consequences and unsustainable outcomes, as described above.

To exhaust the metaphor, HCAOG wants to put community members in the proverbial driver's seat, in the bicycle saddle, at the helm, in the cockpit, and leading the walking school bus. We want to work to achieve the *intended outcomes* people want for Humboldt communities and by building a transportation system that can foster desired outcomes. HCAOG sought community input throughout the county in order to map people's concerns about transportation in their everyday lives, as well as their aspirational vision for the future. The feedback we heard is steering the 20-year Regional Transportation Plan. HCAOG will pursue

ongoing community dialogue, alliances, and collaborative relationships year-round and even after the *VROOM* update is adopted.

COUNTY PROFILE

DEMOGRAPHIC BACKGROUND

Humboldt County is a geographically diverse region located in northwestern California. The County encompasses 3,500 square miles of forested mountains, river valleys, coastal terraces, agricultural lands and coastline. The Pacific Ocean forms the western border of Humboldt County and Del Norte County borders the north. The eastern border meets mountainous Trinity and Siskiyou Counties, and Mendocino County's coastal mountains and valleys border the south. See the Maps Tab (at the end of document) for a map of the vicinity (Figure 2.1)

What is now known as Humboldt County is the ancestral land of several indigenous peoples. There are eight Native American Reservations and Rancherias in Humboldt County: Bear River Band of Rohnerville Rancheria, Big Lagoon Rancheria, Blue Lake Rancheria, Hoopa Valley Tribe, Karuk Tribe, Trinidad Rancheria, Wiyot Tribe, and the Yurok Tribe.

In addition to several unincorporated communities, Humboldt County is home to seven incorporated cities: Eureka, Arcata, Fortuna, Blue Lake, Rio Dell, Ferndale, and Trinidad. City populations range in size from Trinidad (171 residents per latest Census ACS estimate; 365 projected for 2021) to Eureka's nearly 27,000 residents. No community within the County has a population large enough to meet the urbanized metropolitan criteria as defined by the U.S. Census Bureau. The nearest designated metropolitan area is located more than 150 miles away.

Humboldt County's total population (135,940) is 0.35% (0.0035) of the statewide population. The following population characteristics, from the US Census data, give snapshots of other aspects of Humboldt County's rural makeup and factors that influences transportation needs. For instance, we can assume that as they age, people will want to be able to rely on transportation modes besides driving a private car. In Humboldt County, this may mean a steep increase in demand for public transit and a connected network of safe walking and bicycling routes.

Table *Renew*-1. **Race and Ethnicity in Humboldt County (2015-2019)**

Location	Hispanic %	White %	Black %	American Indian %	Asian %	Pacific Islander %	Other %	Two or more %
Statewide	39	59.7	5.8	0.8	14.5	0.4	14.0	4.9
Humboldt Co. (All)	11.6	79.9	1.1	5.0	3.1	0.4	4.2	6.4
Incorporated Areas								
City of Arcata	16.8	75	2.6	2.2	4.1	1.2	7.3	7.7
City of Blue Lake	5.7	76.3	0.0	6.4	1.6	0	4.5	11.2
City of Eureka	13.8	75.3	2.0	2.2	6.6	0.1	6.0	7.7
City of Ferndale	6.2	93.2	0	0.9	1.1	0.0	2.6	2.2
City of Fortuna	21.4	81.2	0.6	2.9	0.6	0.5	7.3	6.9
City of Rio Dell	9.2	85.5	0.1	3.1	2.4	0.0	1.2	7.6
City of Trinidad	5.2	78.4	0.0	8.6	2.5	0.0	1.9	8.6

Source: US Census Bureau, 2015-2019 American Community Survey, 5-Year Estimates

Table *Renew-2.* **Factors that Affect Mobility, Humboldt County (2015-2019)**

Location	Total Population	% Age 65 and Over	% Age 15 and Under	% No Vehicle	% Persons with Disability	% Poverty Rate	% Unem-ployment	Median Income
Statewide	39,283,497	14.0	18.7	3.1	10.4	16.3	3.8	$75,235
Humboldt County (All)	135,940	17.3	16.2	7.4	16.5	20.1	4.7	$48,041
Incorporated Areas								
City of Arcata	18,178	11.3	9.3	10	10.4	38	7.5	$35.506
City of Blue Lake	902	24.1	11.3	5.6	20.7	16.1	3.0	$53,929
City of Eureka	26,966	17.6	17.5	12.1	17.8	20.0	4.4	$42,890
City of Ferndale	1,377	29.0	21.9	3.7	21.0	13.5	3.3	$50,897
City of Fortuna	12,210	19.0	21.6	6.2	20.4	16.9	4.3	$46,193
City of Rio Dell	3,373	12.8	27.9	7.2	20.2	7.6	8.8	$41,071
City of Trinidad	171	26.9	9.6	2.8	20.1	17.0	3.4	$71,667

Source: US Census Bureau, 2015-2019 American Community Survey, 5-Year Estimates

WHAT DO HUMBOLDT FOLKS TELL US?

HCAOG staff and our public outreach partners[1] have had the pleasure of visiting communities around Humboldt to speak with residents who have things to say about transportation in our region.

For the purposes of the 2021 update of *VROOM*, we attended events and meetings from June to September (virtual, and in person applying COVID-19 health precautions). We did "pop-up" tabling in person (adhering to COVID-19 safety protocols) at these events or locales:

- Arcata Farmers Market
- Bayshore Mall (Eureka)
- Blue Lake Annie & Mary Days
- Fortuna Farmers Market
- Garberville Farmers Market
- Hoopa Downtown
- Larson Park Adopt-a-Park Community Celebration (Arcata)
- McKinleyville Farmers Market
- Willow Creek Community Health Center

We also attended other organizations' scheduled meetings (virtual), and hosted our own virtual Community Dialogue & Workshop (September 13), which had approximately 25 to 30 participants. (See Appendix A for all Public Outreach & Engagement Program information.)

In addition, we heard comments from people who took our online (and paper) survey, and who commented on the RTP update drafts.



[1] Consultants with Redwood Community Action Agency–Natural Resources Division and Planwest Partners.

They Say…

Most of the folks we heard from have the same messages when it comes to Humboldt's transportation system. Two common concerns are **safety** and **climate change.** These two concerns are the basis what they find lacking in the current transportation system, and also the basis for what they want it to provide. Consistently, in all the communities we've heard from, their top asks are for safer streets, more bus service, better driver behavior, more walkable neighborhoods, and more bikeways.

On "What's working and what is not?"

From our respondents and participants, there seems to be fair to considerable consensus on the following circumstances, needs, and aspirations. In their own words, they say[2]:

- "More public transit please!"
- "Too many roads where cars can drive too fast even when they are not supposed to. There is not enough bike and pedestrian safe options."



Answers to a poll question at the Community Dialogue & Workshop

- "I love all the trails. Can't wait for the Humboldt Bay Trail!"
- "Better bike lanes and sidewalks would be nice. Walking paths through cities would b nice as well."
- "The sidewalk improvements are great. Drivers seem as dangerous and aggressive as ever, making it scary to share the road with cars even when Im' driving."
- "We have a good freeway system dedicated to motor vehicles but pedestrians and other modes of transportation have suffered…"
- "In such a rural area we have no backups for transportation, you either have a ride with a neighbor or not."
- "Driving is working. Would like more hours of public transportation."
- "Bus routes are not accessible to everyone's schedule and isn't convenient especially to areas beyond Eureka/Arcata. Roads in outlying communities are bad and not well maintained."
- "Single vehicle use works for us, because we live very far away from any stores, transit stops, hospitals, etc. Buses and bicycles aren't very useful to us due to our location."
- "What is not working is the lack of transportation for disabled and elderly."
- "Traffic is not very bad. Beautification and safety is lacking."

On "Your top three transportation topics?" (Community Workshop Take-Aways)

At the Community Dialogue & Workshop, we polled participants so they could choose what topics they wanted to discuss the most. The seven options we presented were:

1. *Getting to where you need to go* (Accessibility) (e.g., multi-modal travel, proximity of daily/major destinations, traffic congestion)
2. *Climate Change Crisis* (e.g., carbon-neutral transportation system, resilient transportation systems in the face of extreme weather and sea level rise)

[2] Direct quotes from survey responses or comments at pop-up events or the community workshop (June-September, 2021).

3. *Regional Land Use* (e.g., infrastructure, land uses, jobs-housing ratio)
4. *Economy* (e.g., supporting/augmenting local and regional economies; creating jobs)
5. *Investments & Financial Viability* (making systems affordable to operate and maintain; stable funding revenues and sources; prioritizing investments; funding formulas
6. *Vibrant Neighborhoods & Places* (e.g., quality public spaces for all ages, social/societal assets, diversity and inclusive)
7. *Safety and Public Health* (reduce traffic-related deaths and injuries, less sedentary travel, more active travel, real and perceived safety threats/risks, how drivers behave behind the wheel)

The group's top three choices for topics to discuss were:

#1 Safety and Public Health
#2 Getting where you need to go
#3 Climate Change

Four breakout groups discussed two to three of the topics. The key take-aways from all things people discussed are:

- Improving transportation safety within and between communities is a top priority of our community.
- People *really* want to be able to get around without a car but feel like they don't have a lot of good mobility options because of connectivity gaps and stressful high-speed areas.
- Our community is ready to de-prioritize cars. Transportation infrastructure design should work well for non-motorized modes, and should slow down drivers. Have the right design for the right occasion/location.
- People want more areas that are highly walkable and car-free.
- Build on the existing bus service and increase it, including new mobility-on-demand and micro-transit options. Aspire to a transit system that is universally convenient, affordable, and attractive for all classes of people.
- Our community sees the many benefits of active transportation.
- People love the new trails and want more trails, especially to enlarge the bicycle network.
- HCAOG should take a lead role in educating and doing outreach for transportation-related safety. HCAOG should actively promote and market using public transportation, especially for those "choice" riders who could use buses but choose not to.
- It is shocking to learn how much transportation infrastructure costs.

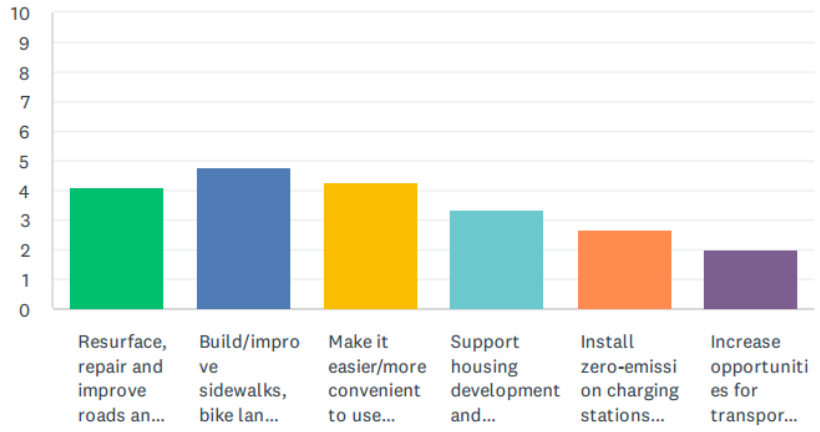
On "How would you prioritize countywide transportation funding?" (Survey Responses)

In the survey we asked people how they would prioritize funding for transportation. Results to that question are shown in the following figure. All survey results are in Appendix A–Public Outreach & Engagement Program.

> "I don't think about this (transportation) stuff, really, so I don't think I have anything intelligent to say. But I am mostly concerned about climate change."
>
> *— Blue Lake resident, Annie & Mary Day 2021*

Q2 How do you think countywide transportation funding should be prioritized? (Rank from 1 to 6 with 1 being highest funding priority and 6 being lowest funding priority)

Answered: 333 Skipped: 4



	1	2	3	4	5	6	TOTAL	SCORE
Resurface, repair and improve roads and bridges	28.92% 94	18.77% 61	12.92% 42	17.23% 56	17.54% 57	4.62% 15	325	4.10
Build/improve sidewalks, bike lanes, pedestrian-scale lighting, traffic calming	34.80% 111	31.97% 102	17.24% 55	9.72% 31	3.76% 12	2.51% 8	319	4.77
Make it easier/more convenient to use public transportation	21.67% 70	20.74% 67	30.96% 100	16.41% 53	8.05% 26	2.17% 7	323	4.25
Support housing development and planning efforts that reduce single-occupancy vehicle trips	9.40% 30	14.42% 46	22.88% 73	22.57% 72	17.24% 55	13.48% 43	319	3.36
Install zero-emission charging stations and support fleet transition to zero-emission vehicles	5.90% 19	7.45% 24	11.80% 38	22.05% 71	32.61% 105	20.19% 65	322	2.71
Increase opportunities for transporting goods into/out of Humboldt (via trucks, ships, or planes)	2.47% 8	8.02% 26	5.25% 17	10.49% 34	19.44% 63	54.32% 176	324	2.01

Here are a just a few of the comments people made at our outreach/community pop-events. (Read all the comments and see photos of the pop-up events in Appendix A–Public Outreach & Engagement Program.)

- My parents live on Myrtle and there is no public transportation for seniors. I can't always drive them when they need a ride. Even one bus or shuttle a week would help a lot. (Eureka resident)
- Can you solve for crappy, dangerous drivers? (Briceland Road resident)
- The public transportation is really good! (Miranda resident)
- For rural people of age, active transportation is not an option. I need to park close to shops, so I don't shop in Arcata. (Garberville resident)
- All the (transportation funding) buckets are vital areas to fund. …But we have to put money to climate change adaptations because that underpins all the others. (Garberville resident)

TRANSPORTATION EQUITY

On February 20, 2020, Ahmaud Arbery, was pursued and fatally shot while jogging. On March 13, Breonna Taylor, on May 25, George Floyd, and on June 12, Rayshard Brooks died at the hands of police. The killings of these African-Americans, and many others, caught attention worldwide and catalyzed a national movement. People took to the streets here in Humboldt County, across the USA, and across the world to protest the violence and killings against black people. People demanded that, as a country, we acknowledge the entrenched, often-violent injustices, and start to dismantle the racist power structure of the United States.

While people of color (all others than "White, Non-Hispanic") make up approximately 21% of the population in Humboldt County, from 2005-2019, they were 38% of pedestrian fatalities.
— CRTP, 2021

Almost immediately, and for months, national, state, and local transportation agencies and organizations made statements against police brutality, and for anti-racism, social justice, and Black Lives Matter.

The responses have made clear and explicit that police brutality, structural racialization, and white supremacy are transportation issues. To borrow from the American Planning Association's statement,

> *The impact of Mr. Floyd's death and other recent grave injustices like it must be viewed in light of the historical trauma inflicted on African American communities, including discrimination wrought by the planning profession itself, which led to structural disadvantages in transportation, housing, education and employment that last to this day. (APA 2020)*

RACE-BASED DISCRIMINATION IN U.S. TRANSPORTATION HISTORY

For generations, public bodies in this country have been complicit, wittingly or not, in oppression based on race. Through explicit legislation and/or normalized practices, local, State and federal governmental agencies have condoned, sanctioned, or enforced, sometimes violently, practices to actively suppress opportunities for Black, indigenous, and people of color (BIPOC) communities. Sometimes intentionally, sometimes naively or ignorantly, decisions our government bodies have made about land use and transportation have fed a system that is fundamentally unequal for

If we ignore historical and current-day racism and pretend that the spaces we create are neutral, we abdicate our responsibility to provide safe mobility for everyone and we become complicit in perpetuating the racist underpinnings of our systems and structures.
— NACTO, 2020

Due to these inequities, the outcome is a pattern, historically evidenced, that privileges white families with better health, better education, more financial assets, easy access to credit, more employment, more choices in housing, safer streets, and more freedom to move and be in public spaces.

Historic racist policies in transportation and land use in the U.S. include segregated passenger trains; segregated public buses; redlining black and brown neighborhoods to deny federally-backed mortgages, infrastructure, and investment; bulldozing thriving black neighborhoods and "slums" to build interstate highways; and relegating minorities to reside near freight hubs and oil refineries that release pollutants into the air and waterways. The rise of the automobile in the U.S. in the first half of the twentieth century is directly linked to the creation of modern police forces in U.S. cities, and policing drivers has perpetuated historical discriminatory enforcement on people of color (Seo, 2019). More modern policies are the criminalization of fare

evasion (of people using public transit, but not of people who evade tolls or parking fees in their private automobiles), racial profiling in police traffic stops, and habitually funding transportation projects in wealthier, whiter neighborhoods and cities.

Recent examples, in 2020, during the COVID-19 pandemic and Black Lives Matter protests illustrate transportation policy that may be benign for privileged white classes, but precarious for BIPOC. Such as

> when we open streets to people but rely on police presence to enforce those spaces, we actively harm many of the people we are trying to support, opening up Black Americans in particular to another venue where they can be stopped by the police, and all too often, arrested, injured, or killed. When we shut transit systems in response to protests, we deny countless people, largely of color or lower incomes, a means of mobility and their right to voice their concerns and seek redress from their government (NACTO 2020).

STATEMENT OF COMMITMENT TO FIGHTING RACIAL INJUSTICE AND INEQUITY

The National Academy of Sciences, Engineering, and Math reemphasizes the responsibility of transportation agencies in addressing equity:

> Transportation agencies that manage federally funded programs and projects are responsible for ensuring that their plans, programs, policies, services, and investments benefit everyone in their jurisdictions equitably. Historically, certain individuals and communities, including those from minority, low-income, and limited English proficiency (LEP) populations, have not benefited equitably from transportation investments and programs. Understanding the impacts of transportation investments on these individuals and communities and taking steps to address inequities are critical functions of transportation agencies (National Academies of Sciences, 2020).

As an important first step towards systemic change, HCAOG commits to taking actions necessary to become an anti-racist organization, and to doing the hard and perpetual work of developing an organizational culture and values that makes our commitment clear to all stakeholders.

HCAOG strongly condemns systemic racism and discrimination in all forms, including those historically entrenched in transportation. HCAOG's fundamental goal is to enhance safe and convenient travel for people throughout Humboldt County—particularly people of color and disadvantaged communities—by connecting individuals to jobs, healthcare, education, recreation, social events, and other opportunities.

To that end, HCAOG firmly embraces racial equity, inclusion, and diversity. These values are foundational to achieving our vision of a cleaner, safer, more accessible and more connected future. We will be part of the solution. We will promote policies and programs that reflect principles of diversity, equity and inclusion, and will work with stakeholders to identify areas of improvement.[3]

[3] The language of HCAOG's statement is based on California State Transportation Agency's (CalSTA's) Statement on Racial Equity, Justice and Inclusion in Transportation, issued June 12, 2020.

RENEW HOW?

PLAN GOAL & OBJECTIVES

OVERALL GOAL: HCAOG's goal is for Humboldt County to have a carbon-neutral, multi-modal transportation system that is comprehensive, safe, sustainable, and equitable so that people in the region can travel and move goods by the modes that best suit the individual or business/industry, and society at large.

OVERALL OBJECTIVE: Program all transportation funds based on multi-modal transportation goals and objectives, and needs and priorities as established in the Regional Transportation Plan. HCAOG will pursue six main objectives/planning priorities. The objectives support one another and will apply to each transportation mode, framing each mode's policies. In alphabetical order, the objectives are:

- **Active Transportation Mode Share/Complete Streets** – Increase multi-modal mobility, balanced mode shares, and/or access. Mobility means having travel choices (for people and goods) with predictable trip times. A balanced mode share means all transportation modes are available in proportion to their efficiency and short-term and long-term costs and benefits. Increased access means more options for people to reach the goods, services, and activities they need.

Guidelines to enhance community connections: #1. Put pedestrian needs first.
— Center for Active Design, 2018

- **Economic Vitality** – Support the local or regional economy by improving goods movement and transportation access, efficiency, and cost-effectiveness; by enhancing economic attractors (e.g. via walkable streets, multiuse trails, transit service, freight access, shared mobility services); and by indirectly cutting health care costs due to more active transportation or less transportation-related pollution, and by reducing consumption of foreign oil.

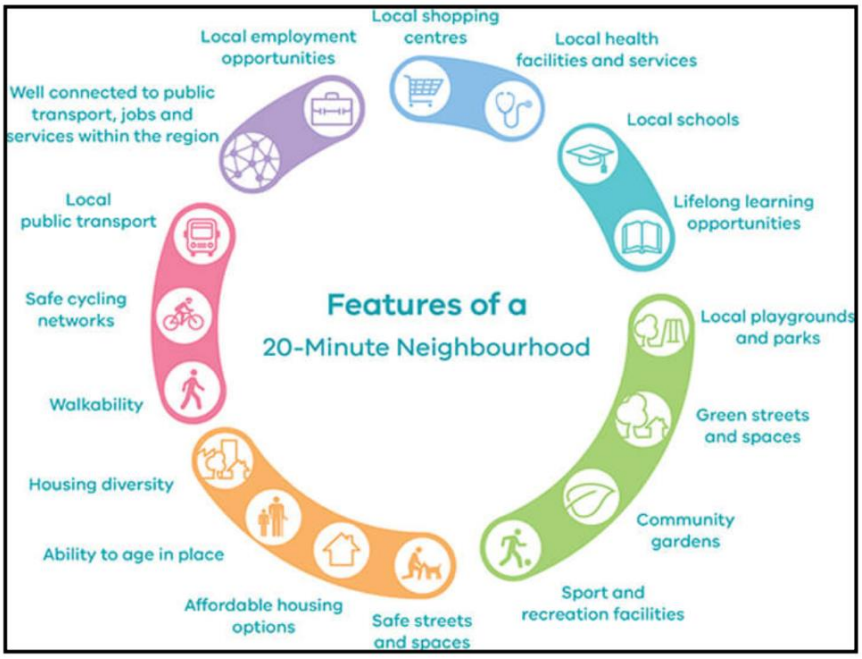
- **Efficient & Viable Transportation System** – Make the transportation system operate more efficiently, such as by increasing multimodal connectivity, increasing opportunities for short trips made via walking or biking, and using Intelligent Transportation System (ITS) management (e.g. Humboldt County Travel Demand Model, Street Saver, GPS tracking on transit buses, other management programs). Make the system more financially and operationally viable such as by prioritizing cost-effective investments, including climate-change and sea-level-rise adaptation and resiliency in planning and design, pursuing stable funding, and preserving transportation assets to maximize resources and future use.

- **Environmental Stewardship & Climate Protection** – Enhance the performance of the transportation system while protecting and enhancing the natural environment. Strive to achieve goals of California Global Warming Solutions Act of 2006 (AB 32) and Sustainable Communities and Climate Protection Act of 2008 (SB 375), protect and improve air, water, and land quality, help reduce transportation-related fuel and energy use, help reduce single-occupancy-vehicle (SOV) trips and motorized vehicle miles traveled (VMT), etc.

- **Equitable & Sustainable Use of Resources** – Advocate for costs and benefits (financial, environmental, health, and social) to be shared fairly. Prioritize projects based on cost effectiveness as well as need and equity for underserved populations. Coordinate transportation systems with land use for efficient, sustainable use of resources and minimize the consumption and use of finite resources such as fossil fuels.

- **Safety and Health** – Increase safety especially for the most vulnerable users (elderly, youth, pedestrians, bicyclists, people with disabilities). Advocate the health benefits of active transportation. Advocate for Vision Zero resolutions to reduce traffic-related fatalities and serious injuries to zero.

Below is the Safe & Sustainable Transportation Targets table. As described in the Introduction of *VROOM 2022-2042*, the HCAOG Board formed an ad-hoc committee, in late 2020, to develop targets to diminish the transportation-related greenhouse gas emissions in Humboldt County. The targets expanded to other measures to benefit the region and meet its goal for a safe, accessible, sustainable transportation system.



The City of Melbourne, Australia adopted a 20-minute radius for their decentralized city—and included safe transportation options as a necessity. Source: Beesmart City

https://usa.streetsblog.org/2020/10/21/can-this-app-tell-you-if-you-live-in-a-15-minute-neighborhood/

Figure *Renew*-4 **Example of planning for a "20-Minute Neighborhood"**

Table *Renew*-3 **Safe & Sustainable Transportation Targets**

PERFORMANCE MEASURE	REGIONAL TARGET	METRIC	AVAILABLE DATA SOURCES (">" sources are available now)	DATA SCHEDULE
Reduce GHG emissions in Air District (NCUAQMD)	Reduce on-road transportation-related fossil fuel consumption in Humboldt County.[1]	~ Transportation fuel sales (gasoline/diesel sales in gallons).	> CA Energy Commission, CA Annual Retail Fuel Outlet Report Results (CEC-A15: by county).	Every 4 years
Percent Mode Shift	• Increase the percentage of all trips, combined, made by walking, biking, micro-mobility/matched rides, and transit to at least 30% by 2030 and 40% by 2050.	~ # of miles of protected bikeways and sidewalks, & % of good intersections on arterials and collectors, and spacing/gaps between those intersections. ~ % of all road miles that are connection nodes at Low Traffic Stress levels 1 or 2. ~ # of barriers [TBD] to low-stress bike/ped transportation between major residential areas and major destinations (identified by network analysis)	> Potential data source: www.bts.gov/browse-statistical-products-and-data/trips-distance/explore-us-mobility-during-covid-19-pandemic ~ Conduct an LTS Network and Connectivity Analysis > Bikeable App (on Google Play) > Data from People for Bikes > Local count data	Every 4 years
	• Double transit trips (including mobility on demand trips) by 2025, and again by 2030, and again by 2040.	~ # of transit boardings ~ # of transit trips	> Transit operators' ridership data > U.S. Census	Annually Every 4-5 years
	• Complete a Low-Traffic-Stress and connectivity analysis of the bike and ped network in the Greater Humboldt Bay Area by FY 2023/24, and countywide by 2026.	Yes/No (completed or not)	~ Conduct an LTS Network and Connectivity Analysis	Every 4 years
Reduce Vehicle Miles Travelled (VMT) by Car[1]	• Reduce VMT per capita by at least 25% by 2030, and 40% by 2050. (VMT includes zero-emission trips)	~ VMT/population ~ VMT/ #households > Ratio between the number of light vehicles registered to residents of Humboldt County vs. the number of households or licensed drivers.	> State DOT data, e.g. California Public Road Data (PRD), derive statistical information from Caltrans' Highway Performance Monitoring System (HPMS).[2] ~ Apply a correction factor for Humboldt County (TBD). > Registration data from Dept. of Motor Vehicles (DMV).	4 years
Zero-Emission Vehicle Infrastructure	(i) ZEV Charging Sites Evaluation Plan: By 2025 evaluate priority of feasible public-charging spaces throughout region. Priority will value equity. Study may be multi-phased,	(i) ~ Completion of charging-sites evaluation plan.	(i) Presence/absence of completed plan.	(i) Target year

PERFORMANCE MEASURE	REGIONAL TARGET	METRIC	AVAILABLE DATA SOURCES (">" sources are available now)	DATA SCHEDULE
	first at community or TAZ/census block level, and second at neighborhood and station location level.			
	(ii) Policies: • 80% of jurisdictions adopt pro-EVCS and electrical upgrade policies and building codes by 2022, and 100% by 2025.	(ii) ~ Number of jurisdictions with building codes that require installing "EV-ready" electrical wiring or EVCS in new development and major remodels. ~ ~ Number of jurisdictions with building codes that require electrical panel upgrades for residential alteration permits, and 200A utility panel ratings for all new residential units. ~ Amount of funding dispensed to subsidize and incentives EVCS.	(ii) > Agencies' adopted policies, building codes. > Agencies' annual budgets.	(ii) Annually
	(iii) ZEV Fueling Infrastructure: • By 2025, install a total of 1, 394 public chargers, including 42 DC Fast Chargers (DCFC). [3] • By 2030, install a total of 3,560 EVCS of which 127 are DCFC. • 100% of households without off-street parking have access to public fast-chargers within ¼ mile of their home by 2035. • Equity performance measure: EVCS are equitably installed in MF residential areas and higher density/lower income areas. • For employee parking lots and MF residential parking of spaces* (or more), 25% of spaces have electric vehicle charging stations by 2025, 35% by 2035, and 50% by 2050. • In Humboldt County, by 2024 hydrogen fuel is available for public	(iii) ~ Number of AC/DC chargers per household at the transportation analysis zone (TAZ) or census block level. *Related metrics as possible*: ~ Number of chargers per household without off-street parking ~ Public AC chargers/population (or per registered vehicles) ~ Public DC chargers/population (or per registered vehicles) at (TAZ) or census block level. ~ Coverage of fast chargers located in (1) high density areas and (2) adjacent to corridors with high traffic volumes (e.g., coverage of chargers per acre or linear ½-mile). ~ Counts by jurisdiction: # of electric vehicle charging stations at qualifying work sites and MF residences. *For parking lots with excess capacity, use average utilization of spaces.	(iii) > Building permits > Alternative Fueling Station Locator (by National Renewable Energy Laboratory) – public and private non-residential alternative fueling stations. https://developer.nrel.gov/docs/transportation/alt-fuel-stations-v1/ https://afdc.energy.gov/stations/#/find/nearest > Plugshare.com app. (Count the number of stations) ~ Manual counts; surveys.	(iii) 4 or 5 years

PERFORMANCE MEASURE	REGIONAL TARGET	METRIC	AVAILABLE DATA SOURCES (">" sources are available now)	DATA SCHEDULE
	transit and long-haul commercial fleet vehicles, with green hydrogen fuel available as much and as soon as possible. • In Humboldt County, by 2030 there is sufficient hydrogen fueling infrastructure and green hydrogen fuel available to enable inter-county travel of medium and heavy-duty fuel-cell EVs.	~ Coverage of hydrogen fueling infrastructure countywide.		
Percentage of Zero-Emission School Buses & Public Fleet Vehicles	i) • 100% of public buses and school buses are zero-emission by 2030. *Note*: Innovative Clean Transit Regulation:[4] > By 2026, 25% of new transit vehicle procurement must be ZEBs; > By 2029 "nearly all," and after 2040 100%, of the new bus procurement must be ZEBs. (ii) Each governmental agency starts converting fleet vehicles to zero-emission by 2022, with interim targets to meet the State's year-2035 goals: • 25% of public fleet passenger cars, SUVs, and forklifts are zero-emission by 2025, and 50% by 2030. • 30% of public fleet medium-duty and pick-up trucks are zero-emission by 2030. (iii) 100% of public fleet work vehicles are zero emission by 2036 (with government incentives and technology available and subsidized).	(i) ~ Survey the fleet inventory of public transit vehicles and school buses. (ii, iii) ~ Survey the fleet inventory of each jurisdiction (local, regional, state, Native American governments).	~ Develop a baseline of vehicle fleets in local area. > Follow reporting from transit agencies to State. > Transit Development Plan	Every 2 to 4 years, and target years.

PERFORMANCE MEASURE	REGIONAL TARGET	METRIC	AVAILABLE DATA SOURCES (">" sources are available now)	DATA SCHEDULE
Efficiency & Practicality in Locating New Housing	i) By 2021/22, start identifying top locations to survey/track for their access to essential destinations (i.e. study trip origin-destinations).	i) Presence of start-up/initial progress.	i) ~ Survey/report from HCAOG	Every 2 to 4 years
	ii) By 2023 have baseline "connectivity scores" for 40%_or more of cities' and county's buildable parcels, including infill development.	ii) Percentage of buildable parcels with baseline "connectivity scores." Track outcomes for underserved communities to gage success in investment equity.	ii) > Travel time API (application programming interface), combined with General Plan Housing Elements. > Apps such as "15-Minute Neighborhood[5] (if needed, overlay maps with data from apps that score local roads for non-driver safety (e.g. Walkscore, Bikescore). *(Open-source apps and data will only increase from now to 2035.)*	
	iii) Starting by 2022, 80% of all new permitted housing units are in places with safe, comfortable, and convenient access to employment, shopping, and recreation by walking, biking, rolling, or transit.	iii) Walkscore, Bikescore, and transit score within ¼ or ½ mile radius of new housing. Track outcomes for underserved communities to gage success in investment equity.	iii) Same as above (ii).	
	iv) Starting by 2022, all new housing contributes to a countywide reduction in per capita VMT from cars.	iv) Estimated VMT per capita from new housing.	iv) ~ Survey local jurisdictions' housing permits: VMT analyses from CEQA assessments, Climate Action Plans, VMT models, and other sources.	
	v) By 2023/24, all jurisdictions have adopted GP/zoning incentives for building in "highly connected" areas and for other climate-friendly housing-development.	v) Number of jurisdictions with adopted General Plan/zoning incentives for GHG-friendly building/development (aligned with Climate Action Plan policies and measures).	v) ~ Survey of adopted plans, codes.	
Convenient Access to Destinations	i) By 2035, 60% of the county's population—equitably distributed regionwide—live in homes/ apartments/dorms where they can safely, comfortably, and conveniently travel to everyday destinations by walking, biking, rolling, or transit/micro-transit, and 80% do by 2050. "Safe, comfortable and convenient travel" means people are able to travel:	• Within urbanized clusters, the range of essential destinations that people can get to, in 25 minutes or less, by biking, walking, or transit. Track outcomes for underserved communities to gage success in investment equity. • Availability of transit trips within 150% of driving time. Track outcomes for underserved communities to gage success in investment equity.	> Travel time API (application programming interface)	Every 5-years

PERFORMANCE MEASURE	REGIONAL TARGET	METRIC	AVAILABLE DATA SOURCES (">" sources are available now)	DATA SCHEDULE
	▪ from home to work within 20 minutes in urbanized areas or within 35 minutes outside urban areas, without riding in a private car; ▪ from home to essential non-work destinations (e.g., school, local shopping, transit connections) within 15 minutes in urbanized areas or within 30 minutes outside urban areas, without riding in a private car.	*{❖ Note: Meeting these targets may require meeting higher targets under Percent Mode Shift (e.g., public transit trip frequency and coverage).TBD.}*		
Vision Zero	i) Maintain zero traffic fatalities per year, or decrease the number of traffic fatalities in the cities and unincorporated county by 50% each year until achieved. ii) Maintain zero bicyclist fatalities per year, or decrease the number of bicyclist fatalities in the cities and unincorporated county by 50% each year until achieved. iii) Decrease by 25% each year the number of people seriously injured in traffic collisions in the cities and unincorporated county.	i, ii) Number of traffic-related deaths, and number of people walking or bicycling who are killed in collisions. Track outcomes for underserved communities to gage success in investment equity. iii) Total number of people seriously injured in traffic collisions, and number of people walking or bicycling who are seriously injured in collisions. Track outcomes for underserved communities to gage success in investment equity. *Map crash, injury, fatality hotspots—priority safety spots; include intersections/facilities with designs that are hotspot-prone. Careful with noise in data.	> Statewide Integrated Traffic Records System (SWITRS) > Transportation Injury Mapping System (TIMS) > StreetStory	Annually Annually
Active Transportation Education	i) Five percent more of school classrooms get multi-modal education by 2023, and 10% more by 2025.	i) Percentage of classrooms receiving multi-modal transportation safety education. (Later data may indicate number of lessons, hours, or days.)✶	~ School surveys (and/or data from grant reporting)	(i)Target years.

PERFORMANCE MEASURE	REGIONAL TARGET	METRIC	AVAILABLE DATA SOURCES (">" sources are available now)	DATA SCHEDULE
	ii) Increase the number of programs that actively promote and incentivize multi-modal travel, targeted to employers with over 20 employees, and government agencies. Expand the reach of such programs each year.	ii) Number of entities engaged.✶		(ii) Bi-annual
	iii) Increase active-transportation marketing and education campaigns for the general public. Reach at least two new communities biannually.	iii) Number of communities engaged.✶ ✶Track outcomes for underserved communities to gage success in investment equity.		(iii) Bi-annual
Invest in Complete Streets	i) Increase by 10% by 2023, and by 25% by 2028, regional discretionary funding set aside for permanent infrastructure, pop-ups, pilots, or other projects for active transportation.	i) Percentage of regional discretionary funding. Track outcomes for underserved communities to gage success in investment equity.	> HCAOG funding budget	Bi-annual
	ii) Secure new funding sources at the regional level and/or the city/county level to benefit active transportation and transit.	ii) Presence/absence of grant awards or new funding mechanisms (e.g. bonds, transportation sales tax, user fees, mitigation funds).	> Survey of regional and local jurisdictions	

[1]Consistent with RCEA's *Repower Humboldt* goals:

- "Work with other local public entities to reduce vehicle miles traveled in Humboldt County by at least 25% by 2030."
- "By 2030 reduce GHG emissions from transportation by over 65% through reductions in VMT, improved vehicle efficiency, the adoption of electric vehicles, and, where determined to be an effective emissions-reduction strategy, the use of biofuels as a bridge to a full transition to zero-emissions vehicles."
- "Accelerate the adoption of electric vehicles, with a target of over 6,000 electric vehicles on the road in Humboldt County by 2025 and 22,000 vehicles by 2030."
- "Develop public, workplace, and residential EV charging infrastructure necessary to support these county-wide electric vehicle targets."
- "Maintain a trajectory of emissions reduction to eliminate the use of fossil fuels by 2050." (Redwood Coast Energy Authority, December 2019. Link: RePower Humboldt/CAPE 2019 Plan Update, https://redwoodenergy.org/wp-content/uploads/2020/06/RePower-2019-Update-FINAL-.pdf.

[2] HPMS Data: Contracts collect local traffic (traffic counts) data triennially, statewide. The data are collected on different locations to reflect characteristics of the road segments. Caltrans estimates/ projects traffic volumes on all road segments based on past and newly collected data. Data includes traffic volumes on State Highways; some locations are permanent and continuous.

[3]. California Energy Commission, Electric Vehicle Charging Infrastructure Assessment (July 2021) https://www.energy.ca.gov/programs-and-topics/programs/electric-vehicle-charging-infrastructure-assessment-ab-2127

[4] California Air Resources Board Innovative Clean Transit Regulation (https://www.arb.ca.gov/regact/2018/ict2018/ict2018.htm) [Dec. 2018]

[5] Mapping your "15-Minute Neighborhood" on your web browser. https://app.developer.here.com/15-min-city-map/

EQUITY POLICIES & ACTIONS

To put the statement of commitment into action, HCAOG will pursue equity strategies and recommendations, such as:

- anti-racist values/culture
- racial equity action plan
- equity trainings
- equity performance measures
- internal equity group
- external equity advisory group[4]

HCAOG has identified initial and ongoing actions and first steps for combating racial injustice, tilted toward the transportation realm.[5] (The following order does not imply any ranking or prioritization.)

POLICY EQUITY-1. Land Acknowledgement:

- ☐ HCAOG benefits from using office space and Board meeting space in Eureka, which is unceded ancestral land of the Wiyot. HCAOG will work to secure a stable funding source with which to contribute to the voluntary Wiyot Honor Tax in order to monetarily compensate the Wiyot Tribe for this benefit. If HCAOG cannot access any governmental fund that allows this type of expenditure, HCAOG will advocate for policy that creates funds that allow this as an eligible use.
- ☐ Begin HCAOG Board meetings and workshops with a verbal indigenous-land acknowledgement.

POLICY EQUITY-2. Establish Goals, Actions (Planning)

- ☐ Adopt diversity, equity and inclusion goals and implementing actions. Integrate the implementing actions in the annual Overall Work Plan so that staff efforts are not peripheral but embedded in the everyday work development of the regional agency. Budgets for engaging the community and building partnerships must be real.
- ☐ Develop of a multi-pronged plan with actions/approaches and policies to use our position to help uproot an unjust system and support the creation of equitable transportation and human landscapes.

POLICY EQUITY-3. Training

- ☐ HCAOG staff will continue internal bias and equity development and restructure our organization so that our efforts are not peripheral but embedded in our everyday work and decisions. The HCAOG board of directors commits to doing additional learning and development as governors of our regional foundation.
- ☐ Allocate time and resources to educate the HCAOG staff. Provide each staff member paid time to be used for social justice training or social justice work related to transportation, including participating for education, engagement, and encouragement events for underrepresented or disadvantaged communities.

POLICY EQUITY-4. Procurement, Hiring, Committee Representation

- ☐ Take an anti-racist, equitable approach to procurement: Purchase supplies equitably such that disadvantaged businesses get the same benefits as historically advantaged businesses.

[4] From Charles T. Brown's presentation to California Transportation Commission, June 24, 2020.
[5] Several examples are from PeopleForBikes, 2020.

- ☐ Fully implement best practices for hiring processes, including for contract work, that improve outcomes for finding, hiring and promoting people of color and of varying backgrounds who fully reflect the fabric of our region and nation. Support internships to increase BIPOC professional experience in transportation planning.
- ☐ Review diversity and representation criteria for HCAOG committee and staff recruiting processes. Continue monitoring and adapting how that leads to greater outcomes of diversity and governance.

POLICY EQUITY-5. Equity Funding, Prioritization

- ☐ Take an anti-racist, equitable approach to transportation funding and project prioritization. Position funding investments and multi-modal-transportation advocacy efforts within the framework of equity and social justice.
- ☐ Follow the direction of BIPOC urbanist and mobility experts to operationalize the steps required to transform systems and to promote the actions most likely to create anti-racist walkable environments. Only support projects and initiatives that address structural racism and implement anti-racist efforts.
- ☐ HCAOG shall prioritize projects that have been planned and designed to bring economic benefits to communities that have had disproportionately low transportation investments and/or disproportionately high transportation harms.

POLICY EQUITY-6. Partnerships, Advocate, Educate

- ☐ Commit staff time and resources to build mutually-enriching relationships with partners who are supporting social justice efforts on the local level, to work to address systemic racism in transportation and land use structures.
- ☐ Support our partners working to create equitable transportation projects and programs in communities throughout Humboldt.
- ☐ Advocate at the federal, state and local levels of government for policies that improve communities by fostering inclusion and supporting equitable and complete mobility networks.
- ☐ Educate and inform by telling the history of racial bias and injustice in transportation and land policies and laws at the national, state, and local level.
- ☐ The imagery and graphics in promotional materials, PSAs, and social media shall reflect the diverse communities in the whole county.

POLICY EQUITY-7. Data Collection

- ☐ Identify and begin implementing actions to strengthen mobility justice and anti-racism in data collection and analysis projects.

ACTION PLAN: PROPOSED PROJECTS

Table *Renew-4.* **Regional Equity Planning Projects**

Agency	Project Description	ST or LT*
HCAOG	**Land acknowledgement:** Establish the protocol of beginning HCAOG Board meetings and workshops with a verbal indigenous-land acknowledgement. Implement this new practice.	ST
HCAOG	**Establish formal equity goals, actions:** Retain consultant services and/or establish an advisory board to facilitate developing guiding actions for building organizational diversity, equity, and inclusion. Outside help can help the organization to foster partnerships and build ongoing relationships between BIPOC and our organization.	ST
HCAOG	**Trainings:** In introductory "welcome packets," training, and/or other written materials for staff, committee members, and board members, include information on internal bias, cultural competency, and the agency's equity and justice goals.	ST
HCAOG	**Equity funding/prioritization:** Explore how a ratings program for projects could serve as a tool to build equitable mobility networks that benefit all members of a community with priority to populations that have been historically under-resourced or under-invested in (see Disadvantaged Communities Criteria, below). *This project overlaps with the Funding Consistency Tool proposed in the Financial Element. Intended to aid in evaluating projects that qualify for discretionary funding.*	ST
HCAOG	**Data collection:** Set a timeline and resources for expanding stock imagery that shows people of many different races, ethnicities, ages, abilities, and body types doing active and motorized transportation in varied settings.	ST

*ST = short term 1 to 10 years; LT = long term 10+ to 20 years.

Humboldt County Disadvantaged Communities Criteria

To begin the process of prioritizing transportation investments in disadvantaged communities in order to reach equity, HCAOG has developed a map to identify equity priority areas (see Figure 2.4). HCAOG will continue to refine the map to be used as a tool for equity funding/prioritization in the region. One future revision will be to add tribal areas as a criterion to identify equity priority areas.

HCAOG used the following criteria to generate Figure 2.4. All data are based on definitions and data from the U.S. Census Bureau 5-year ACS data (2015-2019).

- ☐ Conditions A – Census block groups with indicators:
  - Racial/ethnic minority – where 20% or more of population is either Hispanic or not White, and
  - Households with low incomes (80% or less than the statewide median household income)

- ☐ Conditions B – Census block groups with indicators:
  - Households with low incomes (80% or less than the statewide median household income), and
  - At least 3 of 9 following variables
    1. Poverty – where 45% or more of population lives at 200% or less of the federal poverty.
    2. Unemployed – Census block groups where 20% or more of the labor force is unemployed.
    3. Elderly – where 10% or more of population is aged 75 or older.
    4. Young – 20% or more of population is under age 18.

5. Linguistic isolation – where 5% or more of households have no one over 14 who speaks English only or speaks English very well.
6. Limited mobility-vehicle access – where 40% or more of housing units with 0-1 vehicles
7. Limited mobility-active transportation – Smaller block groups without bike facilities access within ½ mile radius.
8. Limited mobility-transit – Smaller block groups without transit access within ½ mile radius.
9. Housing cost burden – where 20% or more of occupied housing units pay more than 50% of household income in housing costs.

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3. GLOBAL CLIMATE CRISIS



Photo credit: In These Times

"The United Nations Intergovernmental Panel on Climate Change (UN IPCC) has recently concluded that to avoid severe climate consequences, GHG emissions must be reduced dramatically as soon as possible. …The report also shows that human actions still have the potential to determine the future course of climate."

– UN IPCC, 2021

Greenhouse gas (GHG) emissions are primarily associated with the burning of fossil fuels and deforestation, as well as agricultural activity and the decomposition of solid waste. GHG pollution has led to a trend of human-induced warming of the Earth's average temperature, which is causing changes in the Earth's climate. This increasing-temperature phenomenon is known as "global warming," and the climatic effect is known as "climate change." The most common human-produced GHG is carbon dioxide (CO_2).

The California legislature adopted the public policy position that "Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." Further, the state legislature has concluded that

> The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health related problems…Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry (and)…will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state. (Health and Safety Code §38501)

TRENDS AND PROJECTIONS

The United Nations Intergovernmental Panel on Climate Change (UN IPCC), in the "6th Assessment Report" (*Climate Change 2021: The Physical Science Basis*), updated the level of uncertainty of potential climate change in regions around the globe. The authors report that, in the Western North America (WNA) region, we can expect:

- Increases in drought and fire weather in WNA in observations and will continue to increase in the future particularly at higher warming levels (*high confidence*);
- Projected increase in extreme precipitation (*very likely*);
- Projected increase in river and pluvial flooding (*medium confidence*).

Common regional changes in North and Central America include:



Temperature change (mean and extremes) in observations in most regions is larger than the global mean and is attributed to human influence. Under all future scenarios and global warming levels, temperatures and extreme high temperatures are expected to increase (*virtually certain*) with larger warming in northern subregions.

Relative sea level rise is projected to increase along most coasts (*high confidence*), and are associated with increased coastal flooding and erosion (also in observations);

Ocean acidification (along coasts) and marine heatwaves (intensity and duration) are projected to increase (*virtually certain* and *high confidence*, respectively);

Strong declines in glaciers, permafrost, snow cover are observed and will continue in a warming world (high confidence), with the exception of snow in northern Arctic (UN IPCC 2021a).

The UN IPCC 6th Assessment authors alert us to the urgency of both the threat and the opportunity we face (as summarized in the New York Times):

> Under most of the scenarios discussed in the report, warming will continue well beyond 2040, through the remainder of the century. In the worst cases, where the world does little to reduce emissions, temperatures by 2100 could be 3 to 6 degrees Celsius (5.5 to 11 degrees Fahrenheit) above preindustrial levels. That would have catastrophic consequences.
>
> But the report shows that aggressive, rapid and widespread emissions cuts, beginning now, could limit the warming beyond 2050. In the most optimistic scenario, reaching "net zero" emissions could even bring warming back slightly under 1.5 degrees Celsius in the second half of the century.
>
> Such a scenario would be a mammoth and expensive undertaking for the world. It would also require a level of political will that most governments have so far been unable to muster (Fountain 2021).

"The evidence is clear that carbon dioxide (CO_2) is the main driver of climate change, even as other greenhouse gases and air pollutants also affect the climate."

– United Nations IPCC, 2021

GREENHOUSE GAS EMISSIONS BY SECTOR

Global GHG Emissions

Worldwide, the most GHG is emitted from producing electricity and heat emits, and second most is the transportation sector: The burning of coal, natural gas, and oil for electricity and heat is the largest single source of global greenhouse gas emissions (25% of 2010 GHG emissions). The transportation sector primarily emits GHG from fossil fuels burned for road, rail, air, and marine transportation (14% of 2010 GHG emissions) (EPA 2021).

The graphics below show comparative emission sources for the U.S., California, and Humboldt County.

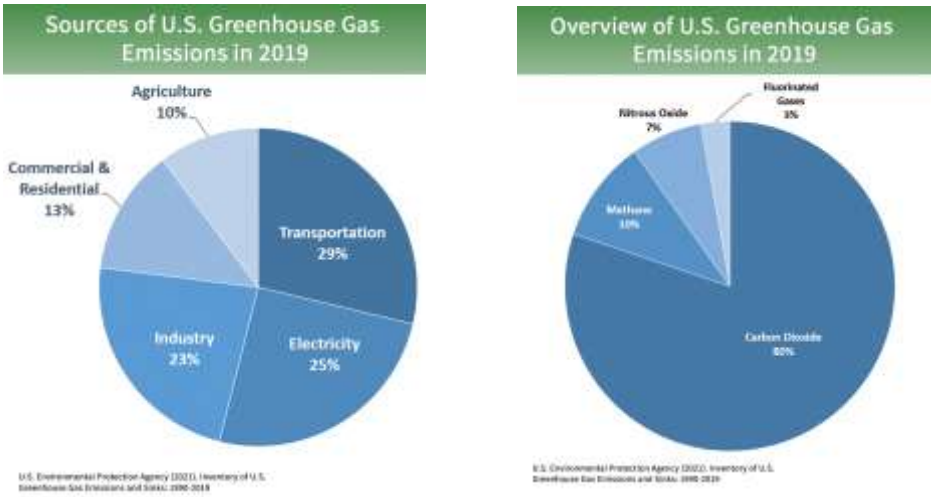


Figure *Climate*-1. **U.S. Greenhouse Gas Emission in 2019**

California GHG Emissions

California's overall GHG emissions peaked in 2004, and have generally trended down since. The transportation sector remains the state's largest source of GHG emissions. Transporation emissions declined from 2007 to 2013, then increased for four consecutive through 2017, and again decreased in 2018 and in 2019 (CARB 2021). In 2019,

> direct emissions from vehicle tailpipe, off-road transportation sources, intrastate aviation, etc., account for almost 40 percent of statewide emissions. When emissions from extracting, refining and moving transportation fuels in California are included, transportation is responsible for over 50 percent of statewide emissions in 2019 (CARB 2021).

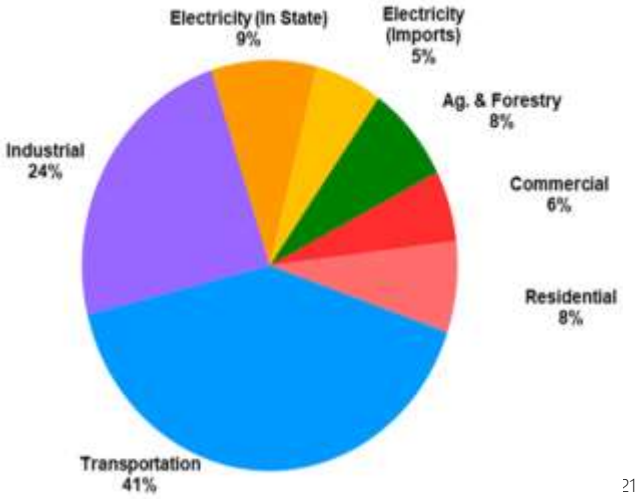


Figure *Climate*-2. **Sources of California Greenhouse Gas Emissions in 2019**

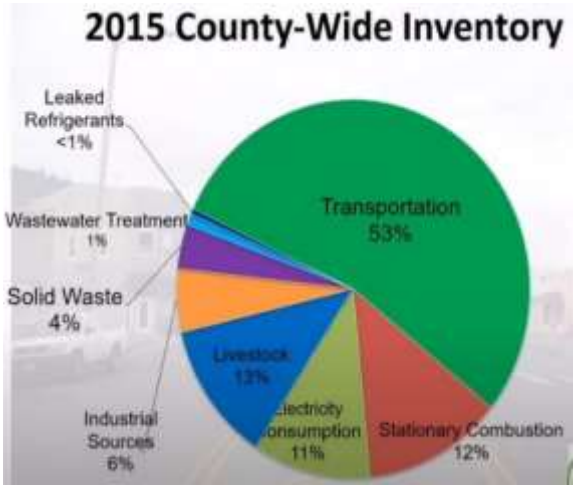


Figure *Climate*-3. **2015 Humboldt County Greenhouse Gas Emissions** (Draft County CAP)

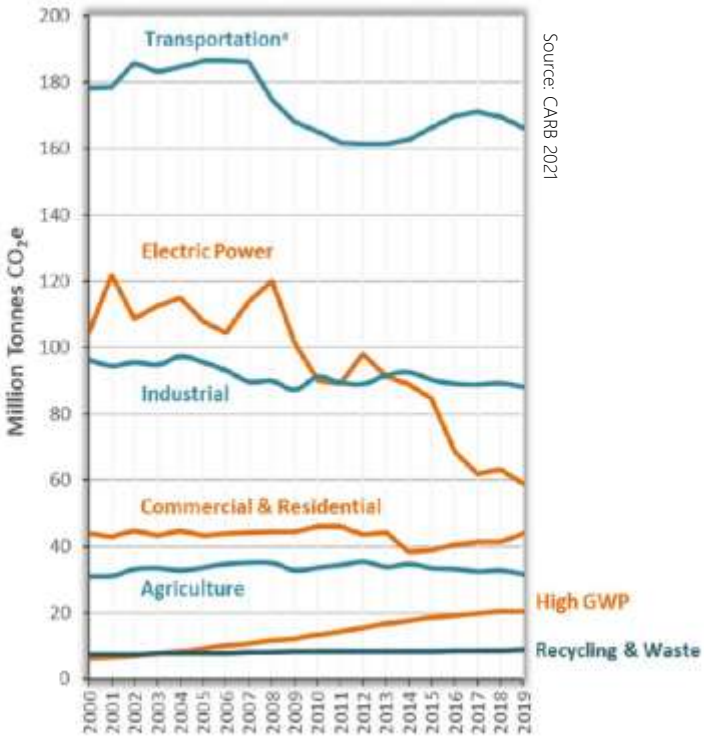


Figure *Climate*-4. **Trends in California GHG Emissions, 2000-2019**

CALIFORNIA CLIMATE ASSESSMENT

The State released, in 2018, the first part of *California's Fourth Climate Change Assessment*. For the statewide transportation sector:

- The increase in annual average and maximum temperatures is expected to raise the **costs of road construction** between 3% and 9%. Adapting roadway materials to withstand higher temperatures is needed to avoid potential costs of over $1 billion by 2070; and
- Over 3,750 additional miles of **highway** will be exposed to temporary **fooding** due to a 100-year storm event (Thorne 2018).

"A new study found that deep greenhouse gas emission reductions (80% below 1990 levels) in California could significantly improve health outcomes, and cost savings would be comparable to the cost of achieving those reductions by 2050. These savings are achieved because shifting from polluting technologies to clean technology improves air quality, saves lives, and improves overall public health."

– California's 4th Climate Change Assessment

NORTH COAST REGION

The "North Coast Region Summary Report" (part of the Fourth Climate Change Assessment) summarizes major climate change risks for communities and natural resources in Mendocino, Humboldt, Del Norte, Lake, Trinity and Siskiyou Counties. The report identifies the following key climate change effects for the region:

- **Season temperatures** will increase 3-5°F by mid-century (2040-2069) and 6-9°F by end-century (2070-2099). Winter season temperatures are expected to increase by a greater magnitude: 5-7°F by mid-century and 8-11°F by end-century. Interior regions will experience the greatest degree of warming.
- The North Coast region already experiences the most **intense storms** in the state in terms of three-day maximum precipitation. Climate change projections indicate that the intensity of individual storms will increase in the future (Pall et al. 2017, Prein et al. 2017, Risser and Wehner 2017).
- The frequency of **extremely dry years** is expected rise, on the order of 80% across most of northern California (Swain et al. 2018)
- **Annual precipitation** is not expected to change signifcantly, but will likely be delivered in more intense storms and within a shorter wet season. As a result, the region is expected to experience prolonged **dry seasons** and reduced soil moisture conditions, even if annual precipitation stays the same or moderately increases. Less precipitation will fall as snow and total snowpack will be a small fraction of its historical average.

- A rise in extreme precipitation events will increase the frequency and extent of **flooding** in low-lying areas, particularly along the coast where food risk will be enhanced with rising sea levels.
- **Sea-level rise** projections differ along the coast, but are greatest for the Humboldt Bay region and Eel River delta, threatening communities, prime agricultural land, critical infrastructure, and wildlife habitat.
- **Wildfires** will continue to be a major disturbance in the region. Future wildfire projections suggest a longer fire season, an increase in wildfire frequency, and an expansion of the area susceptible to fire.
- The impacts of these and other climate-driven disruptions will be disproportionately experienced by **vulnerable populations** in the North Coast Region. These include but are not limited to: low-income individuals, families, and people of color, women, the young, the elderly, people with disabilities, people with existing health issues including mental health issues, and people with limited-English profciency. These populations will ofen not only feel the immediate impacts of climate change more signifcantly, but also are less able to adapt to climate changes or recover from their impacts. (Grantham 2018)

NEEDS ASSESSMENT

CLIMATE CHANGE & SEA-LEVEL RISE IMPACTS TO HUMBOLDT

In Humboldt County, sea-level rise from global warming is compounded by local tectonic activity that causes downward vertical land movement, or tectonic subsidence. "Combining subsidence on Humboldt Bay with sea level rise over the last 100 years, tidal elevations have increased approximately 1.5 feet—the most of any area on the West Coast" (Russell and Griggs 2012 as cited by Trinity Associates 2015). Areas of former tidelands around the Bay are thus "as much as three feet lower than when they were salt marsh in the late 1800s/early 1900s" (Trinity Associates 2015).

Table *Climate-1*. **North Coast Region: Projected Average Annual Maximum Temperatures to 2099**

	HISTORICAL (1950-2005)	EARLY CENTURY (2020-2039)	MID-CENTURY (2040-2069)	END CENTURY (2070-2099)
Mendocino	65.4	68.1	69.9	72.8
Humboldt	60.4	63.2	65.1	68.2
Del Norte	57.4	60.0	61.8	64.8
Lake	68.0	70.9	72.9	75.8
Trinity	61.5	64.7	66.7	69.9
Siskiyou	60.0	63.5	65.9	69.4

Historical and future modeled annually averaged maximum daily temperatures (°F) for North Coast region counties under a business-as-usual (RCP 8.5) emissions scenario (Source: regional LOCA-downscaled data from ten priority global climate models).

Source: Grantham 2018

From the dual factors of land subsidence and global warming, in the Humboldt Bay region relative sea-level is rising at a rate two- to three-times greater than anywhere else in California. In fact, sea-level change at the Humboldt Bay North Spit tide gauge is much greater than any other tide gauge in the Pacific Northwest (Patton et al., 2017)" (Anderson 2017).

The areas at risk of tidal inundation are multiplied by Humboldt's miles of coastline, making Humboldt one of the most vulnerable counties in California.

Caltrans District 1, in partnership with HCAOG, led a regional climate change assessment, focusing on transportation assets and vulnerabilities. That report states that climate change is expected to increase sea levels in Humboldt Bay by a high-end estimate of up to 26 inches by 2050, and up to 70 inches by 2100. Precipitation is predicted to increase by up to 11% by 2050, and up to 14% by 2100, with estimated extreme runoff increases by up to 9% by 2050 and 12% by 2100 (Caltrans District 1 and HCAOG 2014).

"Transportation sector emissions vastly outweigh other carbon-producing areas of California's economy, and the recent spike should alert policy-makers that despite our best efforts, more must be done…"

– Adam Fowler, Beacon Economics

TRANSPORTATION ASSETS AT RISK

Around Humboldt Bay there are approximately 57 miles of shoreline structures—dikes, railroad, and highway/roads—that were constructed across former tidelands and function as barriers to bay waters. If these shoreline structures are overtopped (breached), the land uses, structures, and critical utility and transportation infrastructure located on these former tidelands are at risk of being inundated by tidal waters. Sea level rise would increase the risk to land uses and assets located on these former tidelands. (Trinity Associates, 2018)

Nearly 75% of Humboldt Bay's (almost 77 miles of the 102-mile shoreline) is covered by artificial shorelines. For example, U.S. 101 and State Route 255 are constructed on former tidelands that are protected by earthen shoreline structures (such as dikes). However, only 36% of the bay's shoreline (27.6 miles) is fortified. Nearly ten miles of low-lying shoreline, which currently protects US 101, has been rated highly vulnerable to breaching (overtopping) under current conditions during extreme tides (100-year event), or during annual king tides and/or storm surges that raise the tide by two feet or more above tidal baseline elevation (Trinity Associates 2015).

Dikes alone skirt almost 41 miles of the bay, and railroad approximately another 10, covering half of Humboldt Bay shoreline. The barriers are currently protecting thousands of acres of low-lying former tideland from tidal inundation. The man-made structures are providing barriers for transportation assets such as gas transmission lines, optical fiber lines, electrical transmission towers and distribution poles, highways, roads, city service streets, and a county airport (as well as other important regional infrastructure, agricultural lands, and tribal cultural resource sites) (Trinity Associates 2018).

Table *Climate*-2. **Surface transportation infrastructure (miles) vulnerable to 0.9 to 4.9 feet of sea level rise in the Humboldt Bay Area Plan (HBAP) planning area**

Surface Transportation Type	0.9 Ft.	1.6 Ft.	3.3 Ft.	4.9 Ft.	HBAP Total Miles
Local Roads	9.8	11.0	16.5	22.6	90.1
Collector Roads	1.0	1.6	3.4	5.6	23.6
Highways 101 & 255	5.4	6.1	8.1	9.6	16.2
Total	16.2	18.7	28.0	37.8	129.9

Source: Laird 2018

When the vulnerability to tidal inundation was assessed in 2014, the following transportation infrastructure (and associated water bodies) were reported to be the most at risk for flooding/inundation due shoreline structures (dikes, railroad beds. or other) being breached. The transportation systems (and associated water body) thus identified are:

Years 2015 to 2050, near-term conditions:
- Highway 101 (South Bay and Lower Arcata Bay)
- Highway 255 (North Arcata Bay)
- City of Eureka, City of Arcata, and County local streets and roads (Mad River Slough, Arcata Bay, Eureka Slough, Eureka Bay, Elk River Slough and South Bay)

Years 2050 to 2100, long-term conditions:
- Highway 101 (Upper Arcata Bay and Elk River Slough)
- Highway 255 (West Arcata Bay)
- City of Eureka, City of Arcata, and County local streets and roads (Mad River Slough, Arcata Bay, Eureka Slough, Eureka Bay, Elk River Slough and South Bay) (Trinity Associates 2015)

In the Humboldt Bay Area, the vulnerable roads and streets are concentrated in the City of Eureka and unincorporated communities of King Salmon, Fields Landing, Fairhaven, Samoa, and Manila (Trinity Associates 2018).

CALTRANS DISTRICT 1 CLIMATE CHANGE VULNERABILITY ASSESSMENT (2014)

Caltrans District 1 (Del Norte, Humboldt, Mendocino, and Lake Counties) was one of the first districts to complete a climate change vulnerability assessment. They assessed nearly 1,000 miles of the District's 23 roadways. Overall, the assessment concluded that the majority of the road network had low vulnerability to climate change, but several road segments were considered at risk, having both high criticality and a high potential for impact. Among the vulnerable road segments, high criticality scores were related to their limited redundancy (i.e., lack of alternative road routes) and presence of infrastructure assets such as bridges and stormwater facilities. (Caltrans and HCAOG 2014)

The Vulnerability Assessment identified the top three most vulnerable segments in each county in Caltrans District 1. The most vulnerable locations ("assets") did not change when different climate models predicted different impacts. The transportation assets in Humboldt County that the report found most vulnerable to climate change impacts are three segments of U.S. 101 in the greater Humboldt Bay Area:

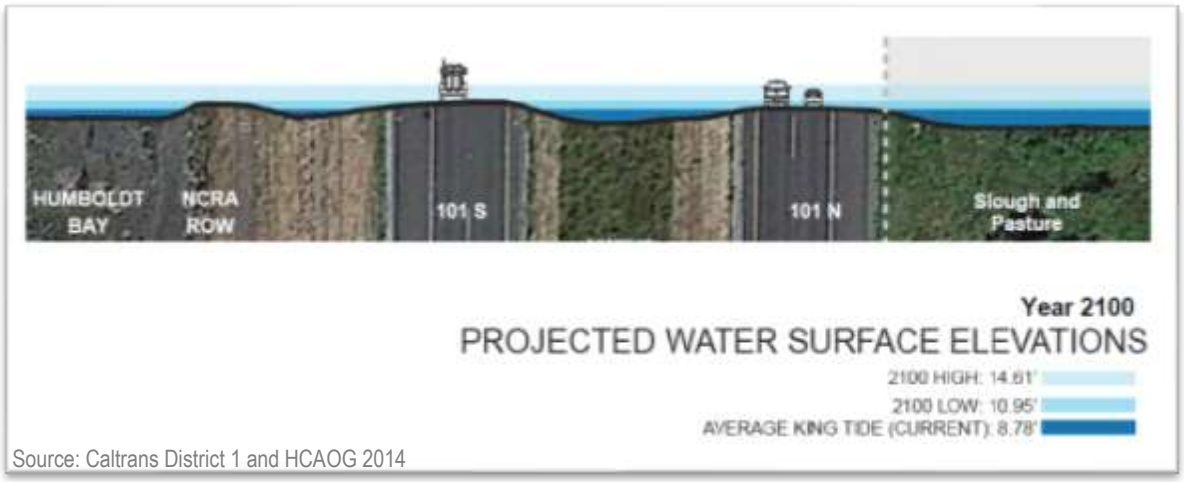


Figure *Climate*-5. **Highway 101 Vulnerability to Sea-Level Rise Along Humboldt Bay**
Water heights predicted for year 2100 under the high GHG emission scenario and the annual average King tide.

- **Rated most vulnerable: US 101** between Rio Dell and Eureka's southern urban boundary. Several portions of this segment are at low elevations and close to the coast/bay, creating a high potential for tidal inundation. This segment is deemed highly vulnerable in part due to its number of bridges, low redundancy (e.g., the bridge over the Eel River), and relatively high volumes of traffic (i.e., average daily trips, ADT).
- **Rated 2nd most vulnerable: US 101** between Eureka's northern city limits and the junction with State Route 255 (south Arcata). Some of the factors that make this segment critical are its high ADT and proximity to large population centers. Its low elevation and proximity to the coast make it more vulnerable to impacts from tidal inundation.
- **Rated 3rd most vulnerable: US 101** between Richardson Grove and Weott. The criticality and impact factors that make this segment vulnerable include having bridges over water, having many stormwater facilities, and the segment's drainage issues that have historically caused frequent slope movement (Caltrans District 1 and HCAOG 2014).

For the Vulnerability Assessment, stakeholders considered concepts for addressing sea-level rise along Highway 101 on Humboldt Bay. Concepts considered included increasing armoring/flood walls, elevating the roadway, and relocating structures. The six adaption options that were ultimately ranked highest (in this assessment process) are summarized in the table below.

CLEAN CARS & FLEETS: ZERO-EMISSION VEHICLES (ZEVS)

The State of California set ambitious targets for the number of zero-emission vehicles (ZEVs) on the road. ZEV technologies refer to battery electric vehicles, hydrogen fuel cell vehicles, and "transitional" plug-in hybrid electric vehicles—all of which can support the goal to reduce tailpipe emissions (CTP 2050). As the technology, market and funding for ZEVs is shifting rapidly, *VROOM* is

Table *Climate*-3 **Summary of Humboldt County-US 101 Prototype-Location Adaptation Options**

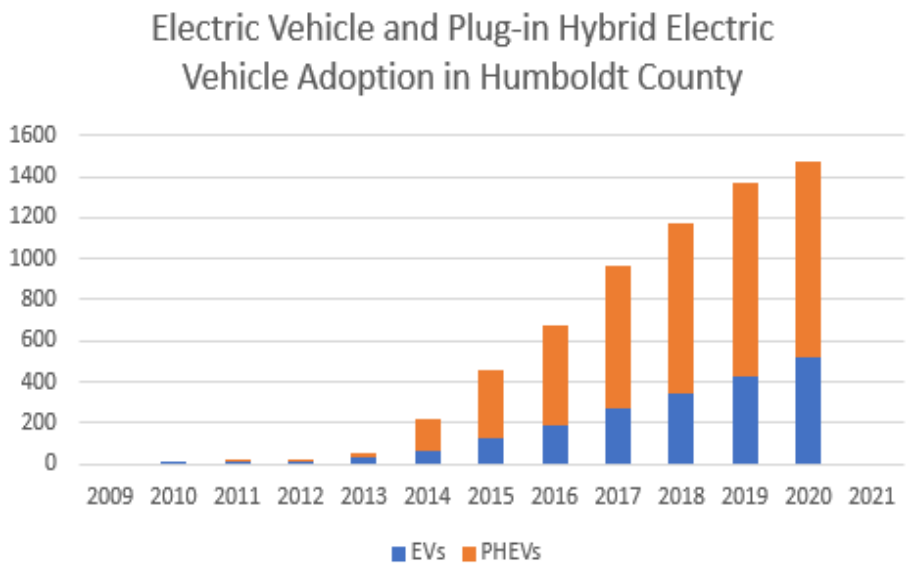
Rank	Adaptation Approach & Option	Project Description	2050 Cost Estimate (000s)*
1	"Defend" approach: Provide protection at existing elevations/ locations	Strengthen/add protection to existing protective structures (RR berm, dikes, fill areas) for 10 miles, including increasing height to 1 foot above 2050/2100 water level at a King tide	$121,000
2	"Accommodate" approach: Elevate the infrastructure above the impact zone	Increase height of the roadway by building up the fill prism 1 foot above 2050/2100 water level at a King tide for 6 miles	$61,000
3	"Accommodate" approach: Elevate the infrastructure above the impact zone	Construct a causeway, 6 miles, at a height of 5 feet above 2050 water level at a King tide	$174,000
4	"Retreat" approach: Relocate infrastructure (horizontally)	Assumed 8 mile re-route to the east of the existing Hwy 101	$350,000
5	"Changes in policies or practices" approach: Increase the interval for infrastructure maintenance & inspection and continue to monitor/evaluate	Equivalent to the No-Project alternative. Only temporary measures enacted and repairs made on an as-needed basis.	$950
6	"Retreat" approach: Temporarily restrict use of infrastructure	Install ITS infrastructure to recommend use of alternate route and increase signage and warning information	$1,000

*Order of magnitude, 2014 dollars. Source: Caltrans District 1 and HCAOG 2014

agnostic as to the particular type of zero-emission vehicle and infrastructure developed in Humboldt County. New vehicle types and their fuel sources should be considered with a full lifecycle analysis to ensure the least possible impact while still meeting regional transportation needs. In addition, ZEV policies and incentives must be distributed so that everyone, regardless of income or location, can benefit from clean cars.

The shift to ZEVs involves several vehicle classes. Federal and state incentives help drive the purchase of personal ZEVs. As more vehicles are manufactured and get to market, costs come down. Meanwhile, advances in battery technology are providing longer driving ranges. Models of pick-up trucks are expected to be on the market soon. Freight trucking is another class with dedicated state funding to support charging infrastructure and vehicle development for long-haul trucking. While much of the focus of ZEV policy is on cars and trucks, electric bikes are also gaining in popularity and market shares.

Zero-emission vehicles are at the forefront of advanced technologies such as autonomous driving. The California Office of Planning and Research published the guidance document, "Automated Vehicle Principles for Healthy and Sustainable Communities," which details strategies to manage the adoption of Connected and Autonomous Vehicles (CAVs). The adoption of CAVs should be focused on electric, shared-use vehicles that are part of efficient land use patterns.



Source: California Energy Commission Zero Emission Vehicle and Infrastrcutre Statistics, June 30, 2021.

Figure *Climate*-6. **Electric and Plug-in Hybrid Electric Vehicles on the Road in Humboldt**

Widespread adoption of ZEVs will require ample charging and alternative fueling infrastructure. According to the CEC, there are a total of 134 public charging stations in Humboldt. There needs to be coordination with local land use authorities to support ZEV charging stations at residential developments, job centers, and public buildings (CTP 2050). The use of the public right-of-way for charging stations will also be critical for broad transition to EVs.

HCAOG has partnered with Schatz Energy Lab, HTA and Redwood Coast Energy to better understand the technical limitations of charging a fleet of battery-powered public transit vehicles (HTA Battery Optimization Study). HTA, A&MRTS, and Blue Lake Rancheria Transit each have battery electric busses in their fleet. HTA is actively pursuing grants to further study hydrogen fuel cell bus technology in the rural context, with the goal of building hydrogen fueling infrasturcture and purchasing hydrogen fuel cell busses.

RTP GOAL, OBJECTIVES, & POLICIES

GOAL: *Reduce greenhouse gas emissions contributed by transportation while building and maintaining a transportation system that is truly multimodal and equitable.*

GOAL: *Minimize the negative health, social, economic, and environmental impacts caused by global climate change and sea-level rise.*

To strive for these goals, HCAOG shall support policies that help achieve the RTP's main objectives/planning priorities:

MAIN OBJECTIVES:	GLOBAL CLIMATE CRISIS SUB-OBJECTIVES (♦) & POLICIES
Active Transportation Mode Share/ Complete Streets	**POLICY CLIMATE-1. Carbon-neutral modes:** HCAOG will work and collaborate on efforts to promote non-motorized travel and the rapid transition to zero-emission motorized vehicles. **POLICY CLIMATE-2. Safe alternative modes:** HCAOG will support and plan transportation projects that provide safe and convenient travel modes for people who cannot or choose not to drive.
Efficient & Viable Transportation System	♦ Reduce motor-vehicle miles traveled (VMT) and lower GHG emissions. **POLICY CLIMATE-3. Clean fuels:** HCAOG will support efforts, including through public-private partnerships, to equitably expand transportation electrification, to optimize development and use of the electric grid, and to expand clean-fuel supply infrastructure.
Environmental Stewardship & Climate Protection	**POLICY CLIMATE-4. Adaptations for sea-level rise:** HCAOG shall encourage partnerships to develop adaptation strategies that address sea-level rise in Humboldt County. **POLICY CLIMATE-5. Traditional ecological knowledge:** HCAOG acknowledges the value of indigenous sciences and knowledge and the need for indigenous perspectives in responding to the climate change crisis. HCAOG shall work to support indigenous-led climate adaptation approaches, and shall work collaboratively with tribes and tribal governments for mitigation, adaptation, and resilience to climate change.
Equitable & Sustainable Use of Resources	♦ Recognize the connections between transportation and land use. **POLICY CLIMATE-6. Land use-transportation resilience strategies:** HCAOG will support local communities in developing integrated transportation and land use strategies for responding resiliently to climate change, and codifying such strategies in General Plans, Regional Transportation Plans, Local Coastal Programs, and other long-range plans. *(CTP 2040 recommended policy)* **POLICY CLIMATE-7. Equity for resilience:** HCAOG strives to assure that individuals and communities at greatest risk from climate-change related threats in Humboldt County, including low-income communities and communities of color, receive resources necessary to achieve sustainable resilience, mitigation, and/or adaptation.
Safety & Health	**POLICY CLIMATE-8. Health and safety:** HCAOG shall work to identify and implement critical mitigation, adaptation, and resiliency actions to protect Humboldt communities from health and safety threats from transportation-related impacts from extreme weather events (such as flooding, landslides, inundation, wildfire, windstorms, and heatwaves).

Facing the global climate crisis, California's governors and legislatures have passed laws enacting policies to actively address both the causes and the risks of climate change. Two of the foundational/early actions were Governor Schwarzenegger's Executive Order S-3-05 (2005) and the *California Global Warming Solutions Act of 2006* (AB 32, 2006), which set targets to limit GHG emissions equivalent to 2000 levels by 2010; and limit GHG emissions equivalent to 1990 levels by 2020.

California's GHG emissions targets for the next decades are:

By 2030	**Reduce GHG emissions** to 40 percent below 1990 levels	*Executive Order B-30-15 (Governor Brown 2015), SB 32 (Pavley 2016)*
	Renewable energy 60% of procurement portfolio	*SB 100 (De León 2018)*
By 2035	**100% zero-emission vehicle sales** (passenger cars and trucks)	*Executive Order N-79-20 (Governor Newsom 2020).*
By 2045	**Carbon neutrality** statewide and net-negative emissions thereafter	*Executive Order B-55-18 (Governor Brown 2018)*
	Renewable energy 100% of procurement portfolio	*SB 100 (De León 2018)*
By 2050	**Reduce GHG emissions** to 80% below 1990 levels	*Executive Order S-3-05 (Gov. Schwarzenegger 2005), AB 32 (Nunez 2006)*

In 2019, Governor Newsom signed Executive Order N-19-19 requiring California agencies to redouble efforts to reduce GHG emissions. The California State Transportatin Agency (CalSTA) is directed to leverage the more than $5 billion in annual state transportation spending for construction, operations, and maintenance to help reverse the trend of increased fuel consumption and reduce greenhouse gas emissions associated with the transportation sector.

RTPA's have a role in meeting these goals by conducting proactive, collaborative, and "adaptive" transportation planning that always considers the real threats of global climate change, and the large role fossil-fuel-based transportation plays in it. This RTP promotes integrating transportation and land use to reduce CO_2 emissions from the regional transportation system. The RTP's goal and targets to curb greenhouse gas emissions from the transportation sector complement the State's goals and targets in AB 32 and SB 375 and align with the state's climate goals.

ACTION PLAN: PROPOSED PROJECTS

Table *Climate-4*. **Regional Climate-Crisis Planning Projects**

Agency	Project Description	ST or LT*
HCAOG	**ZEV Infrastructure:** Work with agencies on infrastructure planning to optimize development and use of the electric grid and clean-fuel supply infrastructure, and to make more public right-of-way available for ZEV charging infrastructure. Support State efforts to strategically place charging stations, for battery electric and hydrogen-fuel cell vehicles, along California's designated Alternative Fuel Corridors, and advocate for Humboldt and other rural areas to receive fair benefits of the alternative fuel transportation corridors. (*California Transportation Plan 2050* recommended action)	ST
HCAOG	**Promote Electric Bikes:** Explore partnerships and incentive programs to support expanded use of e-bikes, such as programs that reduce the total cost of EV ownership Support educating agencies, businesses, schools, and residents about the benefits of electric vehicles. (*California Transportation Plan 2050* recommended action.)	ST

* ST = short-term: one to 10 years; LT = long-term: 10+ to 20 years.

RESEARCH AND PLANNING

STATE-LEVEL PLANNING

"The CTP 2050 also reinforces long-held values such as improving system safety, improving mobility and accessibility, advancing environmental health and justice, and enhancing quality of life.
– California Transportation Plan 2050

California Transportation Plan (CTP) 2050

The *California Transportation Plan 2050* (CTP 2050) must show, among other climate-response strategies, how California can reduce transportation sector GHG emissions to 80 percent below 1990 levels by 2050. *CTP 2050* sets policies and actions to collectively reduce transportation emissions through: clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework.

State agencies must take climate change into account when prioritizing investment (per Executive Order B-30-15 and other climate legislation). Whenever applicable, agencies must use full life-cycle cost accounting to evaluate relative merits of infrastructure investments and alternatives.

Climate Action Plan for Transportation Infrastructure (CAPTI)

The California State Transportation Agency (CalSTA) and the California Transportation Commission (CTC) adopted the *Climate Action Plan for Transportation Infrastructure* (CAPTI) in 2021. CalSTA answers the question "Why is CAPTI necessary?" by stating:

> As the largest contributor to California's greenhouse gas emissions (GHG), reducing emissions throughout all aspects of the transportation sector is urgently needed to address the climate crisis.
>
> Even under the most aggressive scenarios for zero-emission vehicle adoption and a transition to cleaner fuels, California cannot meet its climate goals relying solely on a shift in transportation technologies. This means we must work to reduce our dependence on driving and reduce overall vehicle miles traveled to meet our climate goals.
>
> Moreover, reducing our dependence on driving is also key for our state's equity, healthy, and safety goals—not just climate. (CalSTA 2021a)

Adopting CAPTI, the state has commited that, "where feasible and within existing funding program structures,… the state will invest discretionary transportation funds in sustainable infrastructure projects that align with its climate, health and social equity goals."

To steer those investments, the plan has 10 guiding principles. Foremost is to "invest to create new clean transportation options,"

1. Building toward an integrated, statewide **rail and transit network**;
2. Investing in networks of safe and accessible **bicycle and pedestrian** infrastructure;

"(T)he state commits to investing billions of discretionary transportation dollars annually to aggressively combat and adapt to climate change while supporting public health, safety and equity."
– California State Transportation Agency 2021

3. Advancing investments in light-, medium- and heavy-duty **zero-emission vehicle** infrastructure;

   and to encourage people to adopt and use these clean transportation modes by:

4. Strengthening the commitment to social and racial equity by reducing public health and economic harms and maximizing community benefits
5. Making safety improvements to reduce fatalities and severe injuries of all users toward zero
6. Assessing physical climate risk for transportation infrastructure projects
7. Promoting projects that do not substantially increase passenger vehicle travel
8. Promoting compact infill development while protecting residents and businesses from displacement
9. Developing a zero-emission freight transportation system
10. Protecting natural and working lands." (CalSTA 2021b)

REGIONAL/LOCAL STUDIES & PLANNING

Some local jurisdictions joined the International Council on Local Environmental Initiatives (ICLEI), and resolved to participate in the Cities for Climate Protection campaign, such as the City of Arcata in 2000, and the County of Humboldt in 2007. Local jurisdictions have developed planning and policy documents designed to guide and prioritize measures to reduce GHG (and other air pollution) emissions:

- The **City of Arcata** prepared a *Community Greenhouse Gas Reduction Plan* in 2006, and has prepared subsequent GHG emissions inventories (the latest in 2014). In October, 2017, the City promoted Sea Level Rise Awareness Month, kicking off the first phase of a public awareness campaign to inform the community about current and potential effects of sea level rise in Arcata.
- The **City of Eureka** prepared a *Sea Level Rise Adaptation Planning Report* and an *Addendum No. 1* (December 2016). The Report provides draft goals and policies that could potentially be included in the City's Local Coastal Plan, as well as potential strategies that could be utilized to protect those priority assets. The City will prepare a GHG Reduction Plan as part of the EIR analysis of the General Plan. The GHG Reduction Plan will have measures that the City will implement to reduce GHG emissions.
- The **City of Trinidad** prepared a Draft Trinidad Climate Action Plan (2010) as background for updating the General Plan; the draft plan was designed to provide a framework for creating a CAP. In 2016, the City prepared a draft *Climate Change Vulnerability Report and Adaptation Response* as part of the its Local Coastal Program Update Project. The City will incorporate climate change considerations and adaption responses into their General Plan/Coastal Land Use Plan as appropriate.

- The **County of Humboldt** prepared a *Draft Climate Action Plan* (January 2012) as part of the Draft General Plan. The Draft General Plan includes the air quality policy AQ-P9 and implementation measure AQ-IM3 which direct that the County shall develop and implement a Climate Action Plan to reduce GHG emissions consistent with AB 32 and SB 32.

- The unincorporated County and the seven cities are partnering to develop and adopt the **Humboldt Regional Climate Action Plan** (draft), with strategies to meet legislative and executive orders to reduce countywide emissions by 40% of 1990 levels by 2030 and make progress toward zero net greenhouse gas emissions by 2045.[1] From 2030 to 2045, our community will need to fully transition from fossil fuels and make even deeper cuts in emissions from non-fossil sectors. A key outcome for the transportation sector is:

  "*More accessible communities:* Implementing this CAP will make it easier, cheaper, and more fun to get around by improving accessibility of public transit; expanding shared mobility; expanding and increasing the safety of active transportation modes like walking and biking; and making communities more compact and connected."

- **Humboldt State University** (HSU) completed its initial Climate Action Plan in December, 2016, and met its first target to reduce their facility GHG emissions to or below 1990 levels by 2020. The campus is preparing "CAP 2.0," to be adopted in 2022,. to prioritize policies and projects to meet the goal of achieving carbon neutrality by 2045. HSU will "build climate resilience while addressing basic needs, equitable transportation and other social challenges while prioritizing the most vulnerable of our population."

- The **Humboldt Bay Municipal Water District** (HBMWD) discusses climate change in *Humboldt Bay Municipal Water District Urban Water Management Plan 2020* (June 2020) They conclude, based on the 2014 "Climate Change Vulnerability Assessment" and "California's Fourth Climate Change Assessment: North Coast Region Report" (2018), that "Overall, water supply and demand are projected to be of low to moderate vulnerability of climate change in the north coast region in general, and even less so in the Mad River watershed."

- The **Redwood Coast Energy Authority** (RCEA, a local government joint powers authority) has a goal to achieve net-zero greenhouse gas emissions countywide by 2030, which they outline in *RePower Humboldt: The Redwood Coast Energy Authority's Comprehensive Action Plan for Energy* (2019 Update). To advance low-carbon transportation, "RCEA will decarbonize regional transportation through efforts to reduce vehicle miles travelled, increase advanced fuel vehicles adoption and fuel efficiency, and expand advanced fuel infrastructure." RCEA also administers Humboldt County's Community Choice Energy program, which they turned on in 2017. Through the CCE, Humboldt customers can opt for a power mix of up to 100% renewable energy.

Figure *Climate-4,* depicts area around Humboldt Bay near Eureka (the second-most vulnerable transportation segment in Humboldt, according to the Caltrans District 1 Assessment), as it would be inundated based on projections (circa 2015) of SLR in 2050. This segment of US 101 is currently

[1] Governor Edmund G (Jerry) Brown, Jr., Executive Order B-55-18 to Achieve Carbon Neutrality. (9/10/18)



Figure *Climate*-7. **US 101 Eureka to State Route 255 Possible Inundation**
Inundation map of northeastern Eureka and Highway 101 with a half-meter of sea-level rise, which is predicted for the year 2050. Source: NHE 2015

protected from inundation by the natural shoreline, dikes or berms, and railroad or road grades, but it is vulnerable to existing and future sea levels (NHE 2015).

Figures *Climate*-8 and *Climate*-9 show existing flooding conditions (published 2015) of the north segment and middle segment around Humboldt Bay. Figure *Climate*-10 shows projected inundation areas of upper Arcata Bay Reach (north segment) for 2015–2050.



Assuming tidal elevation is 9.99 feet (MMMW+100-year stillwater level) and that protective shoreline structures are compromised north of Airport Road, extensive flooding of south and north bound lanes.

Source: Laird 2015

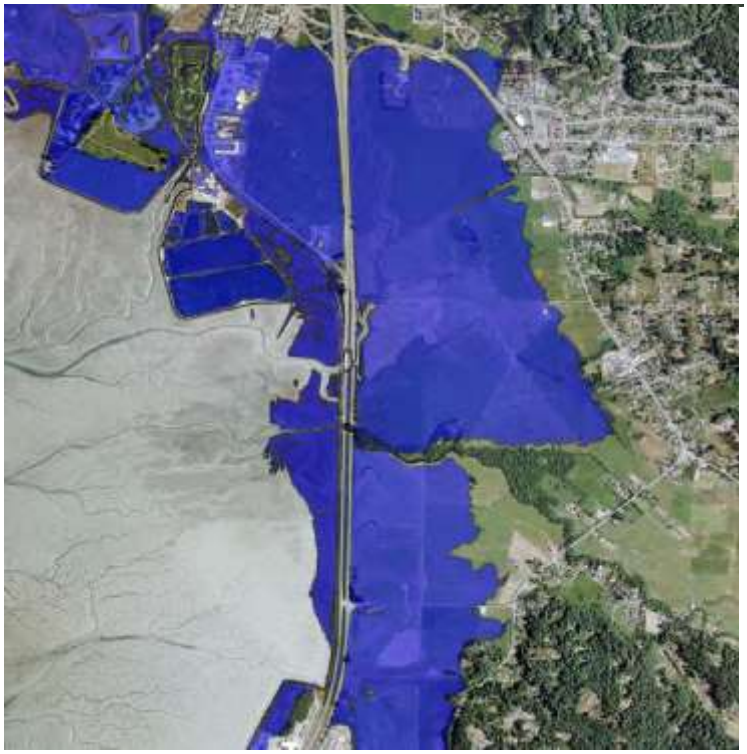
Figure *Climate*-8. **North segment, lower Arcata Bay Reach existing flooding conditions (2015)**



Assuming tidal elevation is 9.99 feet (MMMW+100-year stillwater level) and that protective shoreline structures are compromised, the land adjacent to the road prism is flooded to the west and east of Highway 101, with limited flooding of south and north bound lanes.

Source: Laird 2015

Figure *Climate*-9. **Middle segment, south of Eureka flooding conditions (2015)**



Assuming tidal elevation is 9.38 feet (MMMW+0.5 meter sea level rise) and that protective shoreline structures are compromised, the land adjacent to the road prism is inundated to the west and east of Highway 101.

Source: Laird 2015

Figure *Climate*-10. **North segment, upper Arcata Bay Reach projected inundation 2015–2050**

The Impacts of Sea-Level Rise on the California Coast (2016)

Table *Climate*-5. **Miles of roads and railways vulnerable to erosion and flood from a 1.4-meter sea-level rise along the Pacific Coast, by county and type**

County	Highways (miles)		Roads (miles)		Railways (miles)	
	Erosion-risk	Flood-risk	Erosion-risk	Flood-risk	Erosion-risk	Flood-risk
Del Norte	4.3	8.2	14	80	-	-
Humboldt	6.0	58	20	190	-	28.0
Marin	2.1	4.1	19	27	-	-
Mendocino	13.0	7.9	25	41	-	4.0
Monterey	11.0	31	15	110	2.1	23.0
San Francisco	0	8.0	17	25	-	-
San Luis Obispo	2.5	0.4	18	22	-	0.3
San Mateo	9.8	11	18	67	-	-
Santa Barbara	0.7	7.4	12	21	6.4	7.0
Santa Cruz	2.4	5.0	20	30	1.6	5.5
Sonoma	6.2	8.0	8.4	57	-	-
Total	58		180		10	

Note: Numbers may not add up due to rounding. Source: CCCC 2016 (Table 27)

"The Impacts of Sea-Level Rise on the California Coast" is a paper from the California Climate Change Center (CCCC 2016). The paper presents estimated length in miles and dollars in costs of infrastructure impacted by climate change. Impacts are calculated for the Californian counties and cities expected to be most at risk for impacts caused by climate change and corresponding sea-level rise. The paper states,

> Under current conditions, we estimate that 1,900 miles of roadway are at risk of a 100-year flood event. With a 1.4 m sea-level rise, 3,500 miles of roads will be at risk of flooding, nearly a doubling of current risk. Of the total, about 430 miles are highways (12% of the total mileage), while the remainder are neighborhood and local streets. About half of the roads at risk are around San Francisco Bay, and another half on the Pacific Coast.

The CCCC's paper shows that under current conditions, Humboldt County has the most miles of highway vulnerable to 100-year floods, with Orange County coming in second highest and Monterey coming in third. These three counties comprise 96 of the total 150 miles (2/3) currently at-risk, and over half of the highway miles at risk, statewide, with 1.4 meters of sea-level rise.

Other estimates presented in this paper include:

- Estimated length (in miles) and capital cost of required defenses needed to guard against flooding from a 1.4 m sea-level rise, by county; and
- Population vulnerable to flood and erosion from a 1.4 m sea-level rise along the Pacific coast, by county.

Three tables from CCCCs paper are reproduced below in Tables *Climate*-5 through *Climate*-7.

Table *Climate-6.* **Miles of roads and railways vulnerable to a 100-year flood in 2000 and with a 1.4-meter sea-level rise along the Pacific Coast, by county and type**

County	Highways (miles)		Roads (miles)		Railways (miles)	
	Current Risk	Risk with 1.4-m SLR	Current Risk	Risk with 1.4-m SLR	Current Risk	Risk with 1.4-m SLR
Del Norte	6.6	8.2	59	80	-	-
Humboldt	37	58	120	190	21.0	28.0
Los Angeles	14	31	42	140	5.6	14.0
Marin	1.2	4.1	22	27	-	-
Mendocino	5.6	7.9	28	41	2.7	4.0
Monterey	27.0	31.0	85	110	19	23.0
Orange	32.0	48.0	340	490	5.3	6.6
San Diego	0.6	8.0	12	57	3.0	9.8
San Francisco	0.2	0.4	17	22	-	-
San Luis Obispo	5.3	7.4	10	21	0.02	0.3
San Mateo	3.4	5.0	23	30	-	-
Santa Barbara	1.5	8.0	9.1	25	3.4	7.0
Santa Cruz	9.4	11	52	67	4.2	5.5
Sonoma	4.5	5.9	14	20	-	-
Ventura	2.4	11.0	69	150	3.7	10.0
Total	150	250	910	1,500	68	110

Note: Counties with borders on the Pacific coast and San Francisco Bay (e.g., San Mateo) were separated based on the shoreline affected. Numbers may not add up due to rounding. Source: CCCC 2016 (Table 15)

Table *Climate-7.* **Replacement value of buildings and contents at risk of a 100-year flood event along the Pacific coast, by county**

County	Current risk, in millions $	Risk with 1.4-meter sea-level rise (in millions $)	Percent increase
Del Norte	240	350	+ 43%
Humboldt	680	1,400	+ 110%
Los Angeles	1,400	3,800	+ 180%
Marin	220	260	+ 16%
Mendocino	120	150	+ 22%
Monterey	1,700	2,200	+ 36%
Orange	11,000	17,000	+ 63%
San Diego	690	2,000	+ 190%
San Francisco	670	890	+ 33%
San Luis Obispo	220	360	+ 67%
San Mateo	730	910	+ 26%
Santa Barbara	460	1,100	+ 140%
Santa Cruz	2,400	3,300	+ 34%
Sonoma	170	200	+ 20%
Ventura	980	2,200	+ 120%
Total	21,000	37,000	+ 71%

Note: All values are shown in millions of year 2000 dollars. Counties with borders on the Pacific coast and San Francisco Bay (e.g., San Mateo) were separated based on the shoreline affected.
Source: CCCC 2016 (Table 21)

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4. TRIBAL TRANSPORTATION ELEMENT

The United States Constitution recognizes Native American tribes as separate and independent political communities within U.S. territorial boundaries. In California, Native American lands are usually referred to as Reservations or Rancherias. There are 109 federally recognized Native American tribes in California. There are eight Native American Reservations and Rancherias in Humboldt County, which are: Bear River Band of Rohnerville Rancheria, Big Lagoon Rancheria, Blue Lake Rancheria, Hoopa Valley Tribe, Karuk Tribe, Trinidad Rancheria, Wiyot Tribe, and the Yurok Tribe (see Figure 4.1).

Tribal governments in Humboldt have many of the same transportation priorities and needs as the cities and the County. Among the tribal governments, Reservations and Rancherias also have different priorities and issues for developing and maintaining transportation systems, because the tribes have widely varying land bases for which they are responsible. Each tribe is required to evaluate transportation resources on its reservation, and choose how to improve them for the betterment of their community.

> "Native American tribal governments engage in transportation safety planning for all users in their communities. As sovereign nations, they have the authority to make and approve transportation plans to further their unique community goals."
> — *California Transportation Plan 2040*

TRIBAL TRANSPORTATION PLANNING

"As sovereign nations, Native American tribal governments have the authority to make and approve transportation plans to further their unique community goals. These plans support the planning, construction, maintenance, and operations of roadways and guide the development of transit services on their tribal lands and for the residents of the community. In addition, tribal transportation plans are essential for successful proposals for competitive state and some federal transportation grant programs." (*California Transportation Plan 2040*)

NORTH COAST TRIBAL TRANSPORTATION COMMISSION

The North Coast Tribal Transportation Commission (NCTTC) is an intertribal association formed for the purpose of fostering collaborative dialog on transportation issues of mutual concern. The NCTTC is open to all federally recognized tribes in Northern California and currently is comprised of representatives from the Bear River Band of Rohnerville Rancheria, Big Lagoon Rancheria, Blue Lake Rancheria, Hoopa Valley Tribe, Karuk Tribe, Trinidad Rancheria, the Wiyot Tribe, the Yurok Tribe, and the Elk Valley Rancheria, Resighini Rancheria and Tolowa Dee-ni Nation in Del Norte County.

The NCTTC's mission statement, which HCAOG actively supports, is:

To promote safe and efficient modes of transportation, and to improve transportation, identify transportation needs, and advocate for transportation issues of tribal communities; to collaborate on issues between all of the Native American Tribes; and, to solve problems concerning transportation issues among the tribes.

The purpose of the NCTTC is as follows:

- To actively participate and seek federal, state, and local funding, technical assistance and training.
- To promote safe and efficient modes of transportation;
- To act as representative for tribes, as delegated;
- To assist in federal, state and local transportation planning;
- To seek opportunities to preserve contemporary and traditional modes and routes of transportation;
- To raise awareness of tribal transportation issues;
- To seek funding that does not impact or reduce funding to individual tribes; and
- To represent Humboldt County tribes' transportation issues and priority projects at federal, inter-tribal, tribal, state, and county levels.

The NCTTC members work together and partner on transportation issues, share information about transportation programs, funding sources and project delivery, and network on the best approaches to dealing with transportation bureaucracies. The NCTTC has successfully brought together diverse groups that have historically not worked together.

HCAOG'S ROLE IN TRIBAL TRANSPORTATION PLANNING

> "Transportation is meant to bring people together, bridge divides, cross immovable boundaries and connect people from all walks of life. Caltrans cannot accomplish this mission without addressing the specter of exclusionary, prejudiced place names located throughout the California State Highway system."
>
> *—Toks Omishakin, Caltrans Director*

The "Regional Transportation Plan Guidelines" (CTC 2017) require consultation with and consideration of Indian Tribal Governments' interests in developing regional transportation plans and programs. This includes state and local transportation program funding for transportation projects that access tribal lands. Other State policies relating to transportation planning with tribal governments include the California State Transportation Agency's (CalSTA's) Tribal Consultation Policy, "which obligates respect for tribal sovereignty and pursuit of good-faith relations with tribes." The Department of Transportation (Caltrans) policy "Working with Native American Communities" requires Caltrans to consult with tribal Governments before deciding on or implementing projects/programs that may impact their communities. Caltrans' intent is to "recognize and respect important California Native American rights, sites, traditions and practices" (Director's Policy 19, "Working with Native American Communities" 2001). HCAOG's intent is to uphold the same objectives to recognize, respect, and collaborate with Native American tribal governments and communities.

Six Humboldt County tribes currently have a representative on the HCAOG Technical Advisory Committee (TAC). The six tribes are Bear River Band of Rohnerville Rancheria, Blue Lake Rancheria, Hoopa Valley Tribe, Karuk Tribe, Trinidad Rancheria, and the Yurok Tribe. The TAC provides resources to tribes that are actively involved in acquiring resources for tribal transportation needs. Other tribes will be included in future transportation planning efforts if/when they decide to become active members of the TAC.

HCAOG supports Caltrans' policy that requires the Department to "recognize and respect important California Native American rights, sites, traditions and practices" (Director's Policy 19). HCAOG also commits to following this edict, within its authority, to the best of its ability.

In the past, the HCAOG Board has discussed the potential to include a tribal representative on the HCAOG Board of Directors. In 2013, the Board approved Resolution 13-07: Approving Joint Power Agency

Membership Criteria. This Resolution set forth membership criteria that specified federally recognized Indian tribes or a joint powers agency comprised of multiple tribes were eligible to apply to HCAOG to become a member based on the criteria contained in the resolution.

GOAL, OBJECTIVES, & POLICIES

TRIBAL TRANSPORTATION GOAL: Tribal communities have safe and efficient mobility options, benefit from equitable access to transportation resources, and have strong interjurisdictional partnerships for advocating and solving transportation issues of tribal communities.

POLICY TRIBAL-1 Support NCTTC mission: HCAOG supports the mission of the North Coast Tribal Transportation Commission (NCTTC) and actively engages with the NCTTC. This includes support for the formation of a tribal joint powers authority for the purpose of applying for a seat on the HCAOG Board.

POLICY TRIBAL-2 Support removing sovereign waiver: HCAOG supports legislation that would remove the limited waiver of sovereign immunity from Streets and Highways Code (SHC-94), and also expand the eligible projects to allow Caltrans to enter into direct contracts with tribes for projects in the Active Transportation Program.[1]

POLICY TRIBAL-3 Redress discriminatory names: HCAOG supports Caltrans' initiative to review all named assets located on the state transportation system and propose assets to be renamed. HCAOG will participate in dialogue around re-naming places and transportation infrastructure in an effort to redress discriminatory names.

TRIBAL GOVERNMENT SUMMARIES

BEAR RIVER BAND OF ROHNERVILLE RANCHERIA

The Bear River Band of Rohnerville Rancheria located in Loleta California, is a federally recognized tribe with a total of 238 acres located in Eureka, Loleta, and Fortuna California. Of the 238 acres, 173 acres are held in trust with the federal government and are located in Loleta California. The remaining 65 acres of fee land are located in Eureka, Loleta, and Fortuna California. The Bear River Band of Rohnerville Rancheria runs adjacent to Highway 101.

Included on the Tribe's trust land are the Bear River Casino Resort, Bear River Pump N Play Fuel Casino Minimart, Bear River Tobacco Traders and Coffee, Bear River Recreation Center, Tish-Non Library, Tish-Non Tribal office and community center, 41 Tish-Non residential homes, 11 residential homes on Bear River Drive, the Tribe's wastewater sewage plant, the Tribe's water treatment plant, and renewable energy windmills and

[1] In 2004, Senate Bill 1189 was enacted to provide specific authority for Caltrans to directly enter into contracts with tribal governments. The legislation includes certain restrictions, such that the contract must provide for a limited waiver of sovereign immunity by the tribe for the purpose of enforcing obligations arising from the contracted activity. Since SB 1189 passed, the provision regarding the limited waiver of sovereign immunity has proven to be a barrier to Caltrans entering into direct contracts with federally recognized tribes, because tribes have been reluctant to agree to the waiver.

solar panels. The trust land includes 2.6 miles of road. Included on the Tribe's fee land are two residential apartment complexes in Fortuna California, a commercial property in Eureka California, and several residential properties in Loleta California.

The Rancheria's *Tribal Transportation Safety Plan* was developed throughout 2016 and submitted for approval to the Federal Highway Administration in early 2017.

BLUE LAKE RANCHERIA

The Blue Lake Rancheria, California, is a federally recognized tribe with 98.5 acres in land area, located directly west of the City of Blue Lake. It is adjacent to SR 299, approximately five miles east of the City of Arcata in Humboldt County. Unincorporated lands of the County of Humboldt are adjacent to the Rancheria's northerly and southerly boundaries and the Mad River forms the westerly Rancheria boundary.

The Rancheria operates a deviated-fixed route transit service system and a Dial-a-Ride system, named the Blue Lake Rancheria Transit System (BLRTS). The BLRTS serves Rancheria resident riders as well as riders in Blue Lake, Glendale, Arcata, McKinleyville, Fieldbrook, and Eureka. (See this RTP's Public Transportation Element for more details.)

Transportation Projects – Proposed

Blue Lake Rancheria's strategies for future projects include:

1. Adding sidewalks and bicycle lanes to promote walkability on the Rancheria for pedestrian safety and healthy living;
2. Adding dedicated industrial truck routes to separate commercial and retail traffic;
3. Improving intersections to increase safety;
4. Potentially integrating sidewalks, bicycle lanes, and/or roads with the existing one-mile Annie & Mary Rail Trail;
5. Increasing river access along the Mad River for recreational opportunities;
6. Installing tribal street signs for ease of travel on the Rancheria;
7. Installing more street lights to improve safety;
8. Installing bicycle parking facilities on the Rancheria
9. Coordinating with the City of Blue Lake to improve routes to school and pedestrian facilities between the Rancheria and City of Blue Lake; and
10. Expanding the frequency and/or service area(s) for all Blue Lake Rancheria Transit Service routes.

HOOPA VALLEY TRIBE

The Hoopa Valley Indian Reservation is the largest reservation in California. The Reservation is nearly square and totals approximately 144 square miles. This area encompasses roughly 50 percent of the Hupa aboriginal territory. The Reservation is located in the northeastern corner of the county, approximately 50 miles inland from the Pacific Ocean. State Route 96 bisects the Hoopa Valley Reservation and the Trinity River flows through the center.

State Route 96 is the primary access road for the Hoopa Valley, SR 299 and Interstate 5. State Route 96 is in need of traffic calming and safety enhancements at various locations. The following segments of SR 96 experience peak- and nonpeak- hour congestion: the intersections of SR 96 and School Road, SR 96 and Pine Creek Road/Loop Road, SR 96 and Tish Tang Road, and SR 96 and Tsewenaldin Road.

Hoopa Valley Reservation's regionally significant roads include: Tish Tang Road, which provides the only access to K'ima:w Medical Center; Pine Creek Road, which provides access to significant residential areas and is the sole connection to Bald Hill Road (to U.S. 101) and Dowd Road (route around Martins Ferry Bridge); Bair Road, which provides secondary access to SR 299; and Tsewenaldin Road, which provides access to the grocery store, U.S. post office, radio station, and Lucky Bear Casino.

The Hoopa Valley Reservation operates the Hoopa Airport, a Limited General Aviation Airport. (See this RTP's Chapter 6 *Aviation System Element* for more details)

Transportation Projects – Proposed

The following list is of proposed transportation projects:

1. Downtown traffic calming & safety enhancement project (Highway 96, PM 12.38-12.8)
2. Safe Routes to Schools, pedestrian walkways and bikeways, ATP Cycle 2 Funding
3. Trinity River Bridge pedestrian facilities (California State Route 96)
4. Bald Hill emergency access improvements (BIA Route 11)
5. Hoopa Airport improvements
6. Legion Way Road improvements
7. Marshall Lane improvements
8. Transportation and Road Maintenance Facility

KARUK TRIBE

The Karuk Tribe is the second largest Tribe in California with 3,740 members, of which approximately 900 reside in the County of Humboldt. Karuk Tribal properties are comprised of approximately 900 acres of reservation and Trust Land, and an additional 761 acres in fee status. The Tribe's land is scattered mostly along the Middle Klamath River Sub-basin and in the communities of Orleans, Somes Bar, Happy Camp and Yreka, California.

The Karuk Tribe currently negotiates an Annual Tribal Transportation Programmatic Agreement (TTPPA) with the FHWA under the authority of the Karuk Tribe Constitution and By-Laws and the authority granted by Title 23, USC Chapter 2; and, as amended by the Fixing America's Surface Transportation Act (FAST Act), Pub. L. 114-94 and the Delegations of Authority set forth in 49 CFR Sect. 1.85.). The TTPPA, and subsequent Referenced Funding Agreements, allocate formula-based funding to the Karuk Tribe. Such funding allows the Tribe to perform the planning, research, design, engineering, construction and maintenance for highways, roads, bridges, parkways or transit facility programs or projects on select routes deemed official on the current Tribal Transportation Program Road Inventory.

As required by the TTPPA, the Karuk Tribe Department of Transportation develops an annual Tribal Transportation Improvement Program (TTIP), in which the tribe identifies their priority transportation projects.

The Tribe has identified the following projects for inclusion in this and upcoming Karuk Tribe TTIPs for the Humboldt County community of Orleans, California.

Transportation Projects – Proposed

The following two projects are located in Orleans. For funding sources and estimated costs, refer to the Complete Streets & Connected Communities Element, Table *Streets-4*.

1. Orleans Community Safety Corridor Project

The Orleans Community Safety Corridor Project includes streetscape improvements to address pedestrian/bicycle safety. State Route 96 runs through the community of Orleans and functions as both a state highway and a community main street. In FY 2009/10 an Environmental Justice Grant was awarded to the Karuk Tribe to develop the *Middle Klamath River Community Transportation Plan (MKRCTP)*. The Tribe worked with Caltrans to conduct a series of outreach efforts concerning the transportation needs of local communities along SR 96 in both Humboldt and Siskiyou counties. Outreach efforts included meetings with Caltrans Districts 1 and 2, U.S. Forest Service, and Humboldt and Siskiyou Counties, and community meetings and other discussions with local residents. One focus of this project was the community of Orleans. Further details are available in the MKRCTP (November 2011). The report points to a strong community desire for improved bicycle and pedestrian facilities through Orleans. The Karuk Tribe began the project phase of planning and conceptual design during the summer of 2017; this phase is called the Panamnik: Orleans Community Center Connectivity Project, which has separate funding (State funds transferred to FHWA for Tribes, per 23 U.S.C. 209(a)(9)).

The project proposes to construct non-motorized improvements within the community of Orleans including sidewalks, bike lanes, crosswalk enhancements, and improved signage. A sidewalk on the westbound side of SR 96 from Eyesee Road (PM 37.63) to Ishi-Pishi Road (PM 38.43) and on the eastbound side of SR 96 from Red Cap Road (PM R38.75) to the Orleans Medical Clinic (PM R38.98) would separate pedestrians from motorized traffic and increase pedestrian safety. Installation of bicycle lanes from Eyesee Road (PM 37.63) to Ishi-Pishi Road (PM 38.43) and from Red Cap Road (PM R38.75) to the Orleans Medical Clinic (PM R38.98) would improve bicyclist safety through the community and help to alert drivers to the presence of non-motorized users. In order to construct sidewalks and bicycle lanes the purchase of 0.34 miles of right of way (PM 38.08 to 38.42) will be necessary.

The existing crosswalk located at the Orleans Elementary School (PM 38.16) would benefit from visibility improvements such as sharks teeth. Additionally, a new high visibility crosswalk would be installed across from the post office (PM 38.38). Both high visibility crosswalks would increase driver awareness of pedestrians, increasing pedestrian safety. Furthermore, vegetation clearance and adjustment of guide sign locations should be performed in conjunction with the addition of non-motorized improvements.

Currently an existing guide sign obscures eastbound traffic's view of pedestrians utilizing the school crosswalk, and existing school crossing signs are obscured by vegetation and placement behind a telephone pole. Finally, to address community concerns a depression in the road between PM 38.25 and 38.35 would be signed to alert drivers of limited sight distance. No specific funding source has been determined as of yet for this project.

2. Tishawniik Hill Bikeway and Trail

The project extends from the intersection of California SR 96 and Camp Creek Road and along SR 96 to the intersection of Asip Road in Orleans. Current conditions in the project area, such as excess traffic speeds, minimal shoulders, narrow bridge and a through-cut road segment, impair safe pedestrian and bicycle access.

The goal of this project is to provide a safe, active transportation route on both sides of SR 96. The project entails utilizing the existing roadway alignment, widening the shoulders of SR 96, and constructing a five-foot-wide Class II paved bikeway/pedestrian-way (10,560 linear feet); and a Class I bikeway/pedestrian-way (2,112 linear feet). This project will be constructed within the existing public right-of-way and adjacent to Federal, State, Tribal, and private property.

TRINIDAD RANCHERIA

The Trinidad Rancheria Transportation Department is committed to improving the overall safety of its transportation system, and is involved in initiatives to foster responsible and sustainable stewardship, maintain healthy and diverse ecosystems, as well as preserving and protecting tribal rights.

The Trinidad Rancheria is comprised of four parcels; three separate trust parcels that total approximately 83 acres and a fourth parcel purchased in 2000 at the Trinidad Harbor which is approximately 9 acres. The largest trust parcel is located on the west side of U.S. 101 along the Pacific Coast and is made up of 46.5 acres. The 46.5-acre parcel includes the Tribal Government Operations offices, the Victim Services Social Services Center, the Emergency Operations Center which includes Public Safety, the Tribal Library, RV Park, Cher-Ae Heights Casino, as well as tribal member housing. U.S. 101 bisects the Rancheria on the northeastern corner, which leaves a small nine-acre parcel of tribal residential properties on the eastern side of U.S.101. A third 27.5-acre parcel is located in the unincorporated community of McKinleyville, east of the Arcata-Eureka Airport. Tribal residential properties are located on the 27.5-acre parcel.

Trinidad Rancheria plays an important role in the economic, cultural, and sustainable development of the Trinidad area through their business enterprises; including the Trinidad Pier, Seascape Restaurant, Seascape Vacation Rental, and upland improvements which include the public restrooms, wastewater treatment plant and launch facilities. The Trinidad Pier Reconstruction Project, completed in 2012, corrected the structural deficiencies of the pier, improved pier utilities for the benefit of the public, and indirectly improved the water quality conditions while providing additional habitat for the biological community in the Areas of Special Biological Significance. Additional Rancheria property in the Trinidad Harbor area includes the main entrance and access point to the Trinidad Head, which hosts walking trails, and cultural and historical points of interest. Breathtaking ocean views and recreational opportunities for walkers, joggers, bicyclists, surfers, outdoor enthusiasts, fisherman and tourists contribute to the need for transportation alternatives within the lands owned and managed by the Trinidad Rancheria.

The Trinidad Rancheria approved the *Cher-Ae Heights Indian Community of the Trinidad Rancheria Comprehensive Community-Based Plan* in 2011. The land-use portion of the plan identifies expanded commercial, cultural and residential development. The comprehensive plan's transportation element incorporates much of the information included in the *Trinidad Rancheria Tribal Transportation Plan,* which covers a 20-year timeframe from 2006-2026. The element chronicles the history of transportation prior to European contact, as well as the development of a highway system through the State of California, including U.S. 101.

Transportation Projects – Proposed

The Rancheria began the journey of planning and building infrastructure in the early 2000's. In 2011 the Rancheria completed a "Community Based Comprehensive Plan" which looks at transportation connectivity, long-range planning for cultural preservation, housing, land, environment and economic development. The comprehensive plan's transportation element incorporates much of the information included in the *Trinidad Rancheria Tribal Transportation Plan,* which covers a 20-year timeframe from 2006-2026. The element chronicles the history of transportation prior to European contact, as well as the development of a highway system through the State of California, including U.S. 101. Finding solutions to the existing barriers to pedestrian and bicycle travel, safe routes to school, and alternative access to the Rancheria are transportation issues that continue to be priorities of the Tribal Council. Currently, the Trinidad Rancheria is engaged in three major projects pertinent to the Rancheria's long-range planning and development: U.S. 101 Trinidad Area Access Improvements Project; Long Range Transportation Plan Update; Scenic Drive Slope Stabilization

1. U.S. 101 Trinidad Area Access Improvements Project

The current alignment of State Highway 101 was constructed in 1962. At the time, the Bureau of Indian Affairs gave up right-of-way for the new Highway 101, but did not negotiate for direct access on behalf of the Rancheria. The Trinidad Rancheria is proposing, in concept, a "new interchange with local connections to Scenic Drive and Westhaven Drive, with pedestrian access" (Table Streets-4).

Currently, the only access to the Rancheria main parcel, which houses Tribal Government Operations, the Victim Services Social Services Center, the Emergency Operations Center which includes Public Safety, Tribal Library, RV Park, the Cher-Ae Heights Casino, as well as Tribal Member Housing is by way of Scenic Drive, a two-lane, three-mile-long road that parallels U.S. Highway 101 along the west side from the City of Trinidad to the north and Moonstone and Westhaven communities to the south. Scenic Drive was constructed in the early 1920s on the face of a steep bluff adjacent to the Pacific Ocean, and has experienced extensive damage associated with slope instability and bluff erosion at several locations. Access to the Rancheria is compromised due to the regular road closures and inherent instability of Scenic Drive.

To address the loss of connectivity of tribal lands east and west of US 101, and inadequate safety, accessibility, mobility and operational issues, the Rancheria initiated the Project Study Report-Project Development Support (PSR-PDS) phase in 2015. A project delivery team (PDT) was formed consisting of: Trinidad Rancheria staff and contracted engineers, Caltrans Project Manager, Caltrans Department Managers, as well as representatives: FHWA, Bureau of Indian Affairs (BIA), HCAOG, Humboldt County Planning & Engineering Departments, Humboldt County Board of Supervisors, and City of Trinidad. Once the project's Purpose and Need statement was reviewed and ultimately established with the input from project stakeholders, the Trinidad Rancheria contracted engineers and Caltrans District 1 worked with stakeholders to identify possible alternatives to meet the transportation needs and transportation deficiencies identified by the Trinidad Rancheria. The PSR-PDS ultimately identified 12 possible alternatives; these alternatives, and potentially additional alternatives, will be analyzed in the Project Approval and Environmental Document (PA&ED) phase slated to begin in 2021. The Rancheria is dedicated to maintaining an inclusive relationship with various stakeholder groups as the planning process unfolds.

2. Long Range Transportation Plan Update

The project will address the Tribe's critical need to update its 2006 Long-range Transportation Plan (LRTP). This update will integrate multi-modal transportation and land use planning to support health, safety, economic development, community livability, sustainability, and cultural values. The update will identify transportation needs of the Trinidad Rancheria and its connections to local communities adjacent to tribally-owned lands. The LRTP goal is for a cohesive, culturally-appropriate and multi-modal transportation system

that integrates with the Tribe's Comprehensive Plan and Development Standards and is linked to the Regional Transportation Plan and other local and regional planning efforts. A Comprehensive and Sustainable LRTP with prioritized transportation improvements will provide the foundation for other transportation improvements.

3. Scenic Drive Slope Stabilization Mitigation Planning Study

The Scenic Drive Slope Stabilization Mitigation Planning Study project objectives are to: (i) evaluate the causes of the erosion/slide hazards on Scenic Drive; (ii) evaluate the most cost effective solution to stabilize the roadway and surrounding lands; and (iii) prepare three mitigation alternatives and cost estimates (plans) to stabilize the highest priority erosion/slide hazards owned by and of interest to the Tribe on Scenic Drive. The Scenic Drive Slope Stabilization Mitigation Planning Study will include all erosion/slide hazards on Scenic Drive and surrounding lands owned by and of interest to the Tribe. It is imperative for the Tribe to be able to respond to these hazards with a well thought out plan that reduces the risk to the community and protects its resources. This plan will help reduce the loss of life as well as help protect the infrastructure that is integral to the Tribe's sovereignty and cultural integrity. It is also important for the Tribe to increase its capacity to respond to natural disasters in a way that is well planned and organized.

YUROK TRIBE

The territory of the Yurok people runs along the coast seven miles north of the Klamath River to Wilson Creek and 35 miles south of the river mouth to Little River. Inland, their territory follows the Klamath River from its mouth upriver for over 45 miles past the confluence of the Klamath and Trinity Rivers. The watershed of the Lower Klamath River and its tributaries dominated the Yurok Territory. The River is mountainous, heavily forested and meanders 52 miles along the federally designated Wild and Scenic Klamath River.

The Yurok Tribe has prepared and adopted several transportation plans. The Yurok Tribal *Long Range Transportation Plan* (updated in 2016) identifies the Tribe's transportation goals and needs, and includes a list of projects for the TTIP. *Tribal Transportation Safety Plan (2016)* identifies opportunities and activities to improve transportation safety for the Yurok Tribe. *The Yurok Trails and Waterways Master Plan (2014)* identifies and classifies trails and waterways.

Historically, the Yurok people used the Klamath River along with a traditional system of trails as their primary transportation routes. Many of the roads today on the Yurok Reservation follow these same traditional trails. The Yurok Reservation was once the center of a bustling logging economy that depended upon improved roads for the removal and sale of logs. As logging on the reservation diminished, State and county roads and bridges on the reservation have fallen into disrepair. While highways and roads off the reservation were widened and brought up to federal standards, highways and roads on the reservation have deteriorated and fallen far short of federal highway standards. Consequently, most road segments on the reservation are incomplete, underdeveloped or falling seriously behind acceptable federal standards for public roads. State Route 169 and U.S. 101 serve as the major transportation arteries of the Yurok Reservation, and are key access points for Tribal economic development and transportation-related commerce. A twenty-mile strip of SR 169 on the upper reservation is a one-lane highway without striping, guardrails or other safety measures.

The BIA stopped conducting routine road maintenance in 1988. For the last 25 years, the only road maintenance on tribal or BIA roads has been the result of disaster assistance after major storms. Funding for road maintenance provided by the BIA amounts to less than $50,000 per year. It is estimated that the backlog of roadway maintenance could be in the hundreds of millions of dollars. In fact, most roadways have fallen

into such deplorable condition that road maintenance can no longer address the problem, and most routes now require major roadway rehabilitation. Additionally, Hunter Creek Bridge in Klamath is rated below an acceptable standard and requires replacement.

The Yurok Tribe has established the Yurok Tribal Transit Service (YTTS) which currently provides regular fixed route and demand responsive public transit services within the Klamath and Weitchpec communities. YTTS has implemented a seasonal River Ferry providing transportation between Wautec and Klamath. Tribal Transportation and FTA grants fund this service. (See this RTP's Public Transportation Element for more details.)

Transportation Projects – Proposed

The following lists proposed transportation projects:

1. Yurok Tribe Future Projects:
2. Klamath Tsunami Trail
3. Klamath Blvd Crosswalk
4. Klamath Beach Road Resurfacing Project
5. Expansion of the River Ferry
6. Tulley Creek Road Resurfacing
7. Intersection Safety Improvements for Weitchpec School Road
8. Intersection Safety Improvements for New Village Road
9. Implement a Car Seat and Seat Belt Educational Program
10. Road Safety Audit on Intersection SR 169 with McKinnon Hill Rd
11. Bald Hills Road Improvements
12. New Village Road Resurfacing Project
13. Morekwon Road Resurfacing Project
14. Mckinnon Hill Road Resurfacing Project
15. Jack Norton School Road Resurfacing Project

WIYOT TRIBE

The land base of the Wiyot Tribe is an 88.5 acre parcel of trust land located south of Eureka near the community of Loleta. Table Bluff Reservation is a community of 34 homes, and the Tribe's administrative buildings. In addition, the Tribe owns property on Cock Robin Island and on Indian Island in Humboldt Bay. While the Tribe's land base is small, the Tribe serves the needs of approximately 600 citizens. Hookton Road is the main arterial road connection to the Table Bluff Reservation from U.S. Highway 101. Flooding at Hookton Road often reroutes drivers to use smaller collector roads to reach destinations within the county. Public transit or paratransit is not available on the Reservation. The nearest connection to public transit is the RTS bus stop in Loleta.

REFERENCES

CITATIONS

Caltrans 2016 *California Transportation Plan 2040* (Adopted June 2016).

Caltrans 2021 "State Agencies announce Steps to Address Discriminatory Names, Inequities in State Parks and Transportation System Features." September 25, 2020. Accessed 6/16/2021. https://dot.ca.gov/news-releases/news-release-2020-030

CTC 2017 (California Transportation Commission) *2017 Regional Transportation Plan Guidelines.* (Adopted on January 18, 2017.)

HCAOG 2018 Humboldt Regional Bicycle Plan Update 2018

Karuk Valley Tribe 2011 Middle Klamath River Community Transportation Plan

Trinidad Rancheria 2012 Trinidad Rancheria Road Safety Audit

Trinidad Rancheria 2006 Trinidad Rancheria Tribal Transportation Safety Plan 2006-2026

Trinidad Rancheria 2014 Trinidad Rancheria 2014 Safety Plan

Yurok Tribe 2014 The Yurok Trails and Waterways Master Plan

Yurok Tribe 2016 Long Range Transportation Plan

Yurok Tribe 2016 Tribal Transportation Safety Plan

5. EMERGENCY TRANSPORTATION ELEMENT

Emergency transportation, at the regional level, primarily addresses transport needs for large-scale evacuation associated with natural disasters such as floods, earthquakes, tsunamis, landslides, and wildfire. Ongoing climate change will increase the frequency and severity of wildfires, while non-infill development patterns are increasing the number of households requiring evacuation in the wildland-urban interface. HCAOG's role in emergency preparedness is to help prepare a resilient transportation system that is flexible enough to handle great surges of travel before, during, or after a major emergency. HCAOG will support and collaborate on proactive emergency planning and projects.

> Following Hurricane Katrina and the levee failures that flooded New Orleans, the majority of people who died were over the age of 60, and many had disabilities or were unable to leave owing to lack of transportation.
>
> — *National Council on Disability, 2009*

EXISTING EMERGENCY MANAGEMENT

National, state, and local agencies are part of a total emergency management hierarchy established in the United States to assist all people during times of crisis. At the national level, the lead agency is the Federal Emergency Management Agency, under the Department of Homeland Security. At the state level, the lead agency is the California Office of Emergency Services. At the local level, every county and many cities have a local Office of Emergency Services (OES). The local OES must plan for emergencies within its Operational Area (OA). Each California county is its own OA.

The Humboldt County OES is under the Sheriff's Department; the Sheriff is the Director of Emergency Services for the County. The OES coordinates on-going preparedness in cooperation with local jurisdictions and agencies, including law enforcement, emergency responders, and transportation service providers. The Humboldt OES prepares the "*Emergency Operations Plan*" for the Humboldt OA. The plan includes:

- "Flood Contingency Plan" (December 2012)
- "Local Assistance Center Plan" (adopted March 2011)
- "Joint Information Center Plan" (adopted July 2014)
- "Dam Failure Contingency Plan" (adopted June 2016)
- "Volcano Ash Contingency Plan" (adopted July 2014)

Being prepared and ready to respond to emergencies requires proactive multi-jurisdiction and multi-agency planning. Entities that have responsibilities, expertise, and assets in emergency management include, but are not limited to:

- Governmental jurisdictions (County, Cities, Tribes, State, Federal)
- Transit/paratransit operators, HCAOG, Caltrans, California Highway Patrol, Humboldt County Sheriff–Office of Emergency Services
- Local fire and police departments, emergency/medical first responders, Cal Fire.

- Representatives and stakeholders for people with disabilities, seniors, people with special mobility needs, and transit-dependent populations.
- Institutions with large facilities or campuses (which may serve as emergency shelters, staging areas, etc., e.g. fairgrounds, college campuses, community centers).

EMERGENCY AND RESILIENCE PLANNING

In this section we briefly outline three standard components (or phases) of emergency planning:

- Emergency Preparedness Planning
- Emergency Response
- Disaster Recovery

EMERGENCY PREPAREDNESS PLANNING

Proactively preparing for emergencies will lessen a disaster's impact on the community. Proactive planning actions include assessing potential threats and vulnerabilities, establishing (or reinforcing) authorities and responsibilities for emergency actions, acquiring and maintaining emergency resources, training emergency personnel, and developing and testing emergency procedures. Below we discuss these preparedness strategies:

- Alerts & Warning Messages
- Asset Inventories
- Evacuation Planning
- Registries

Alerts & Warning Messages

Warning messages will alert people to an impending risk and can tell people how to take protective action. A fast and reliable warning system is vital in emergencies, especially for conveying transportation information during mass evacuations. Intelligent Transportation System (ITS) technologies can help broadcast warnings and keep evacuees and emergency personnel informed. Examples of such ITS applications are road weather and information systems, changeable message signs, satellite positioning technology (e.g., GPS for in-vehicle route guidance), and emergency vehicle preemption (which enables first responders to preempt or extend traffic signals and navigate congested intersections).

Caltrans, with support by the FHWA, is developing "Upstate California Regional Intelligent Transportation Systems (ITS) Master Plan" for the 16 counties in the North State Super Region, which encompasses Caltrans Districts 1 (Humboldt), 2, and 3. HCAOG is on the steering committee for this plan. The ITS Plan will direct how ITS technology and equipment can be used to help provide more efficient, safe, and convenient travel in the region. Examples of ITS technological applications include traveler information websites, satellite positioning technology, emergency vehicle preemption, and variable message signs.

Asset Inventories

For emergency planning, agencies should be aware of regional transportation assets that can be used. Transportation assets for emergency response and evacuation. Those assets include: roadways and trails, bridges, harbors, airports, public transit, paratransit, and even parking lots. In addition to infrastructure, transportation assets include agencies, trained personnel, vehicle fleets, and communication equipment. The region should keep current inventories of primary and contingency transportation assets, including emergency response fleets, transit and paratransit vehicles, governmental fleets (e.g. cities, county, tribes, harbor, airport, etc.), and transit centers. Other resources are street maps (printed and GIS), and fuel and power sources (e.g. fueling and charging stations).

In 2015-2016, HCAOG's former Service Coordination Committee[1], comprised largely of public transit operators, coordinated with the Humboldt County OES to build on the framework between transit operators and emergency planners for emergency evacuation planning. Emergency contact lists and fleet inventory lists, including passenger capacity, have been compiled with information from public transit agencies and local schools throughout Humboldt. Contact lists include emergency contact information, radio channels and frequencies. The fleet inventory lists fleet information including fueling station locations, and passenger capacity information including ambulatory and/or wheelchair capacity. This emergency evacuation planning information will facilitate efficient and expedient evacuations in the event of an emergency. Agency information will be updated regularly with RTP cycles.

FEMA lists five stages of disaster response:
1. alert and notification;
2. warning;
3. protecting the citizens and property;
4. providing for the public welfare; and
5. restoration.

— National Council on Disability, 2009

Evacuation Planning

Evacuation planning is HCAOG's opportunity and responsibility to create transportation solutions for evacuating people from a hazardous area. In collaborating with multi-agency and multi-jurisdictional planning efforts, HCAOG can help identify transportation resources for evacuation routes and methods of evacuation. HCAOG can also analyze the potential transportation demand in the event of a major evacuation, particularly specialized transportation needs for those more at risk, including transportation-disadvantaged groups.

Transportation planners and emergency responders will want to know who (and how many) will be at risk if we must evacuate the area. People at risk include those who lack independent, reliable means of transportation. People without their own transportation are even more vulnerable if they also lack money and/or have a disability that limits their mobility. Peoples' mobility can be hindered by cognitive disorders, intellectual disabilities, reduced stamina or being easily fatigued, needing use of a mobility device (e.g., wheelchair, cane, crutches, or walker) or medical device (e.g. oxygen tank), and people with limited or no sight or hearing.

People also have different behaviors during a disaster. For instance, there are numerous decisions individuals need to make, such as whether or not to evacuate, which route to take, which mode of transportation to use, and when to leave. Understanding how people make these decisions can help inform resilience planning. Another consideration of resilience planning is mutual aid (people helping each other) and transportation

[1] HCAOG merged the committee with the Social Services Transportation Advisory Council in 2020-21.

network companies (Uber, Lyft, etc.) to assist in meeting the transportation needs of community members during a disaster.

Best Practices for Evacuation Planning:

1. Coordinate support and logistics with federal, state, local, and regional transportation resources and emergency responders.
2. Educate people on evacuation procedures, personal responsibility, and public transportation options for evacuating. Encourage all individuals, employers, and agencies to have evacuation plans.[2]
3. Identify the range and number of people who may need transportation in disaster situations. Map those populations in relation to transportation assets, evacuation routes, and reception centers or shelters. (See "Registries" below.)
4. Plan for a complex array of evacuation and transportation needs, including evacuating people with medical or mobility equipment and service animals. Plan and train for point-to-point evacuation procedures for a wide variety of settings: school, work, home, stores, recreational venues, highways, bridges, etc.
5. Have transportation guidelines for evacuation response. Partner with first responder agency personnel to develop technical guides. Partner with health services and social service agencies for disabled, seniors, and other populations with special mobility needs.
6. Have MOUs with transportation agencies and paratransit agencies for disaster evacuation.
7. Directly involve people with disabilities and disability organizations, including local paratransit agencies, in evacuation planning and training exercises.

Registries

Maintaining a self-identified registry system is one way to estimate and plan for transportation demand in the case of a major emergency. Registries identify those most at risk of losing mobility/transportation options during an emergency. Registries should be up-to-date, readily available to first responders, and linked to those involved in transportation and evacuation support.

Emergency responders and other agencies may have concerns about how practical and effective registries are. These concerns should be discussed, and a consensus sought on whether registries are workable or not, locally and regionally.

[2] "Employers are subject to meeting ADA provisions and must address the needs of people with disabilities in evacuation plans (Loy and Batiste, 2004). … Such provisions may be limited to designating a temporary location of refuge while waiting for rescue or could include buddy systems for helping people out of buildings." (NCD 2009)

Recommendations for Building a Resilient Transportation System

Identify Vulnerabilities

Identify where and how a system's components could fail or become inefficient. Examples of potential problems are:

- A transportation link breaks, such as a blocked roadway, bridge, or sidewalk.
- A disaster causes extreme traffic congestion on a particular roadway(s).
- A disaster requires emergency transport of a large number of people, many who cannot drive, have difficulty walking, or have medical problems that limit their mobility.

Identify Ways to Increase Resilience and Security

Examples of strategies that can increase resilience are:

- Increase transportation system diversity. Maintain opportunities for people to walk, cycle, rideshare, carshare and travel by transit.
- Increase network redundancy and connectivity (e.g., the number of roads and transit routes in an area).
- Increase facility design and construction standards to withstand extreme conditions.
- Improve the ability to communicate with transportation system users, including people with special needs, even under unusual conditions.
- Establish ways to prioritize transportation system resources (road space, fuel, vehicle capacity) so it is available first to higher-value transportation activities.

Source: Victoria Transport Policy Institute, British Columbia, Canada

EMERGENCY RESPONSE

Transportation and Evacuation

Transit and paratransit fleets can serve as emergency vehicles for evacuating people, as can aircraft. Local paratransit and transit resources are some of the best assets to tap into for evacuating people with mobility disabilities because the regular drivers and dispatchers are already familiar with individuals who most need transportation assistance, and often know their needs and locations. Evacuating people with disabilities includes evacuating caregivers, guardians, service animals, and necessary mobility and medical equipment (e.g., wheelchairs). Paratransit and transit agency dispatchers can also relay updates about emergency road conditions, and can help get out warnings and alerts to regular riders.

Evacuation response should account for alternative modes of travel. Households without a car may choose walking or bicycling as their mode of transport to evacuate. Providing and maintaining an integrated multi-modal transportation network is therefore critical to support evacuations.

Emergency preparedness plans and formal agreements should cover how transit and paratransit resources can be utilized and coordinated with other emergency response efforts. For example, plans should specify when transit vehicles, used for emergency purposes, will have access to fire or flood zones if roads are closed to non-emergency vehicles. Mutual aid agreements (or MOUs) should describe if emergency services personnel will escort transit vehicles through danger areas, or if, for instance, transit drivers must be certified for emergency evacuation transport.

Search and Rescue

Transportation resources can aid in search and rescue efforts after a major disaster. Transit and paratransit vehicles can help transport the seriously injured to local medical facilities, and airplanes and helicopters can provide emergency medical evacuation to hospitals further away. Buses, vans, and aircraft can also transport search-and-rescue teams into the affected areas, and airports provides takeoff and landing areas for search-and-rescue flights. Fleet vehicles can assist in animal (pet) search and rescue as well.

> During the recovery phase, if proper transportation infrastructure does not come back quickly, it can cause many ongoing issues… After housing, the second most important service severely impacted in the storm's aftermath is public transportation.
>
> *— National Council on Disability, 2008*

DISASTER RECOVERY

Few communities develop disaster recovery plans before a disaster strikes (the City of Los Angeles is a notable exception) (NCD, 2009). The recovery phase includes work to restore public services and safety, clean up damaged areas, and get people back to their homes, schools, and workplaces as quickly as possible.

One of the first tasks for recovery is to assess damage to major infrastructure. Agencies in each affected jurisdiction must examine the impact on the transportation system and other public facilities. The post-disaster inventory of transportation assets will allow responders to prioritize needs, assign resources, and appeal for outside aid.

GOALS, OBJECTIVES, & POLICIES

GOAL: Humboldt County has a transportation system that will successfully serve its population in the event of a major disaster, hazard, or emergency, thereby mitigating the potential medical, financial, and emotional traumas to the community.

OBJECTIVES: To strive for this goal, HCAOG shall support policies that help achieve the RTP's main objectives/planning priorities (in alphabetical order):[3]

The tree symbol indicates objectives that are Safe & Sustainable Transportation objectives (see Chapter 2 for all SST objectives and targets.)

MAIN OBJECTIVES:	EMERGENCY TRANSPORTATION SUB-OBJECTIVES (♦) AND POLICIES
Active Transportation Mode Share/ Complete Streets	♦ Pursue Complete Streets to give people more transportation options in emergency evacuations.

[3] The objectives are described in more detail in Chapter 2, Renewing Our Communities.

Economic Vitality	◆ Increase emergency transportation preparedness to help minimize the direct costs and indirect economic losses caused by major disasters, hazards, or emergencies.
Efficient & Viable Transportation System	◆ Improve asset and vulnerability analyses of the regional transportation system, including infrastructure, equipment, and trained personnel. ◆ Attain regionally coordinated, multi-modal planning for emergency preparedness, evacuation, search and rescue, and recovery.
	Policy Emergency-1 HCAOG will support and collaborate in reviewing and updating emergency plans to address transportation resources available in all phases of disasters: prevention, preparedness, response, recovery, and mitigation.
Environmental Stewardship & Climate Protection	◆ Reduce on-road transportation-related fossil fuel consumption in Humboldt County.
	Policy Emergency-2 HCAOG will lead, facilitate, and support efforts to incorporate climate change adaptation and resiliency planning into emergency transportation and evacuation planning.
Equitable & Sustainable Use of Resources	◆ Increase the equitable distribution of county residents who live in homes/ apartments/dorms where they can safely, comfortably, and conveniently travel to shelter areas and emergency services by a variety of modes.
	Policy Emergency-3 HCAOG will facilitate and encourage involving people with disabilities and disability organizations, and other transportation-vulnerable stakeholders, in emergency planning, including assessments, exercises, training, debriefing, and post-action reports.
Safety & Health	◆ Improve the emergency preparedness and resilience of transportation facilities. ◆ Keep transportation systems, agencies, and personnel ready and equipped to seamlessly execute emergency response transportation operations.
	Policy Emergency-4 HCAOG supports region-wide, multi-agency planning, training, and equipment acquisition for emergency preparedness and resiliency. HCAOG and the public transit operators should work with the County Office of Emergency Services to develop a collaborative, effective role in disaster preparedness and response. **Policy Emergency-5** HCAOG will help disseminate emergency preparedness information and educational materials on emergency transportation and emergency evacuation.

ACTION PLAN: PROPOSED PROJECTS

To work towards achieving our objectives for emergency transportation, HCAOG staff and committees will continue to establish and maintain contacts for collaborating and participating with other stakeholders. HCAOG does not intend to "recreate the wheel" where emergency plans already exist. We intend to work from emergency plans and strategies already established, and help develop, augment, or improve transportation-related procedures.

Table *Emergency-1* **Regional Emergency Transportation Proposed Projects**

Agency	Interagency Emergency Transportation Planning Project	Funding Source	ST or LT*
HCAOG, SSTAC	Planning Framework — Foremost through the SSTAC, explore opportunities to create a formal framework between transit operators and emergency planners. The framework may identify, establish, and standardize information-sharing between transit agencies and emergency operations centers (EOCs). Projects	RPA, LTF, grants	ST

	could also address improving communications and leadership between the agencies and training within transit agencies.		
HCAOG, SSTAC	Transportation Guidelines for Evacuation Response (for public transit operators) — As needed, participate in developing regional guidelines for how local public transit operators' will function in emergency evacuation situations. Coordinate with first responder agency personnel to develop public transit operator technical guidelines for use in emergency evacuations. Coordinate with first-responder agency personnel and health services and social service agencies for disabled seniors, and other populations with special mobility needs.	RPA, LTF, grants	ST
HCAOG, SSTAC	Registry—Explore if a registry of populations with mobility limitations would be worthwhile as a resource for local transit and public health/social service providers. If so, identify the geographic range and number of people who may need transportation in disaster situations. Map the populations in relation to transportation assets, evacuation routes, and reception centers or shelters.	RPA, LTF, grants	ST

*Short-term (ST) is one to 10 years, long-term (LT) is 10+ to 20 years

FUNDING

Most transit operators are not currently in a position to fund emergency planning exercises and programs from their operating budgets. Money for emergency planning, exercise planning, and training often must come from grants and other governmental sources. Potential federal and state resources include training classes (offered by the California OES, U.S. DOT, U.S. FTA) on incident management systems and terrorism awareness. The U.S. Department of Homeland Security and the California Office of Homeland Security administer several grant programs also.

PERFORMANCE INDICATORS

The table below, lists performance indicators for an emergency transportation system. The table groups indicators by "goals," which correspond to the RTP's six main objectives/planning priorities.

Table *Emergency*-2 **Performance Indicators for Emergency Transportation Operations**

GOALS	INDICATORS	MEASURES	DATA SOURCES
Balanced Mode Shares	Has access increased for transit, paratransit, micro-transit, walking and/or biking for emergency evacuation?	• Major, essential emergency destinations lacking safe access by transit/paratransit/micro-transit and/or walking and biking.	Local transit operators' data.
Efficient & Viable Transportation System	Has HCAOG participated in more emergency planning and/or collaborated on more emergency plans? Are inventories current for emergency transportation assets?	• Plans developed/updated with HCAOG input. • Rate at which plans and inventories are updated.	Emergency plans, agreements (MOU, MOA), protocols, and asset inventories.
Environmental Stewardship	Do emergency plans include or coordinate with efforts to adapt to and mitigate climate change impacts?	• Emergency plans lacking actionable measures to prepare for and respond to anticipated impacts related to climate change.	Emergency plans, agreements, protocols, and asset inventories. Climate change plans.
Equitable & Sustainable Use of Resources	Have members of the most vulnerable populations (disabled, elderly, people without private means of transport) participated in emergency planning efforts?	• Number of people from vulnerable populations who actively participated in emergency drills and/or other emergency planning efforts.	Emergency plans, agreements (MOU, MOA), protocols, and asset inventories.
Safety & Public Health	Are emergency evacuation resources adequate? Are redundancies in place in case primary communication systems or response resources are disrupted?	• Number of safety improvement projects implemented. • Public-assisted emergency evacuations per 1,000 residents. • Average rate of response and/or miles of transport for publicly assisted emergency evacuees. • Number of emergency evacuations unfulfilled or denied.	Reports on emergency tests/drills. Post-emergency data.

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6. LAND USE-TRANSPORTATION ELEMENT

LAND USE AND TRANSPORTATION

Land use decisions affect transportation decisions and vice-versa. Clearly, where cities and counties put houses, businesses, parks, industry, shopping, and other uses will affect how people travel from one to the other. And, how and what transportation infrastructure is built will dictate the travel choices people have.

Land uses, from a regional or state level to the neighborhood and street level, are transformed by the transportation corridors and travel means surrounding them—or intersecting them. As we have witnessed in the United States in the last few generations, transportation decisions have ended up dictating land use developments, which then dictate what transportation options are possible. To develop land, or conserve and preserve it, our best strategy is to plan land use and transportation together.

> Land use directly influences how we travel. More efficient land use can expand mobility options, reduce travel times, and limit emissions, all while addressing California's housing shortage.
>
> *– CTP 2050*

The State recommends actions to "encourage efficient land use." The *California Transportation Plan 2050* describes how land uses and transportation systems correspond to one another:

> Improving accessibility involves bringing origins and destinations closer together, such as housing, schools, shopping, parks, and entertainment. This can be achieved in urban, suburban, and rural parts of the state, not only by concentrating future housing and job growth, but also by improving the balance of different land uses. These changes can be supported by infrastructure investments such as complete streets, transit and active transportation infrastructure, and last-mile connections that support compact, mixed-use developments.
>
> …(I)mproving land use efficiency can lead to gentrification as accessible neighborhoods attract higher-income earners and displace low-income residents from their long-time communities. To address this, we must ensure that tenant protections, anti-displacement, and housing-affordability measures are in place (Caltrans 2021).

HCAOG promotes proactive planning policies and actions that mutually consider transportation and land use, such as those presented in Caltrans' *Smart Mobility Framework* (Caltrans, 2010). Smart Mobility, Caltrans explains,

> emphasizes the application of land use strategies and the use of transit, carpool, walk, and bike travel to satisfy travel needs through a shift away from higher-polluting modes. For maximum effectiveness, transportation and land use strategies need to be complemented by travel demand management initiatives including innovative approaches to parking and to transportation pricing. The benefits don't just affect the physical environment—they affect public health as well, because reduced auto use is associated with more physically active travel that contributes to better health, lower household transportation cost, and greater reliability (Caltrans, 2010).

HCAOG supports applying *Smart Mobility Framework* concepts and activities to guide planning, investment, design, and management for transportation and land use. The *Smart Mobility Framework* promotes creating meaningful travel choices by:

- A transportation system with facilities and services that offer highly-connected multi-modal networks with complete streets.
- Development and urban design characteristics that create communities where walking, biking, and transit use are common choices—including density levels that contribute to shortening many trips and supporting productive transit use.
- A supply of housing that allows people of all incomes and abilities to live within reasonable distance of jobs, school, and other important destinations, so travel does not take too big a bite out of household time and budgets.
- Facilities for all modes that are designed and operated to enhance their surroundings, and that support economic development by creating favorable settings for investing in development and revitalization.

Additional strategies for promoting good connections and functionality between transportation and land uses include efforts to:

- Integrate land use and transportation planning to maximize limited natural and financial resources, to minimize impacts on environment, and to support community values and quality of life.
- Support regional multi-modal travel on major routes that connect main population centers and major destinations. A seamless network of pedestrian and bicycle routes should be the goal in more densely populated areas.
- Support policies that reinforce providing schools in locations that balance walkability and diversity. Promote land use policies for locating and designing school sites to safely accommodate students arriving and departing by all modes of transportation; prioritize safe access for children who are bicycling or walking.
- Promote citizen involvement at all levels of planning so that local communities and neighborhoods help determine their particular transportation needs.
- Design, promote, or require traffic calming features through land use planning in order to maximize safety and encourage walking and bicycling. Traffic calming helps minimize noise, speeding, and discourages drivers from using residential neighborhoods as thoroughfares.

Humboldt County's regional transportation system serves a population of 135,000 residents dispersed over 3,573 square miles.

Figure 2.2 (see Maps Tab) shows general land uses in Humboldt County. Figures 2.3a, b, and c show population centers and major destinations.

LAND USE PATTERNS: SOME PAST & PRESENT

The land of the California Pacific Northwest is unceded territory of indigenous people. Within Humboldt County's political boundaries are traditional, ancestral territory and current homelands of several indigenous nations, including (and not limited to) the Hupa, Karuk, Mattole, Tolowa, Wailaki, and Yurok. Indigenous

peoples and tribes have been here for millennia. They established travel and trade routes, by land and by water, that are primary routes upon which Humboldt communities and businesses depend today.

In California, the early white settlements (or Spanish missions) that developed into today's major cities were started in the late 18th century, when people traveled mostly by foot for daily destinations. Land uses, and the streets that followed, were built on a pedestrian scale in the denser urban areas, surrounded by agriculture and undeveloped natural lands. Cities emerged from the pedestrian-scale street grids (commonly with intersecting streets named with letters and numbers) such as in Old Town Eureka and around the Arcata Plaza. Historic "old towns" throughout the state (and U.S.) are walkable places. As towns and cities became more prosperous, streets could be built wider to accommodate a radius that a horse-drawn carriage would need to turn around. Then, as is widely known, as the automobile became mass produced and mass marketed, communities started to be built away from urban centers, and the drive to suburban —and more segregated—housing began.

The suburbs, too, are part of the history of white settlement. It was not just the car that induced the suburbs, but housing policies (at the federal, state, and local levels) that actively promoted and mandated racial segregation and housing discrimination. One example is the Federal Housing Administration (established in 1934). The FHA categorically denied insurance mortgages for African-American neighborhoods while it subsidized builders to construct entire subdivisions elsewhere, especially in suburbs. The FHA stipulated that homes would be sold to whites, and explicitly prohibited selling (or reselling) the homes to African-Americans. Another example housing policy that can discriminate are zoning laws that require single-family homes and prohibit apartments; such zoning effectively discriminated against non-white homebuyers or residents when the banking industry would not approve home loans to African American families. Bank loan officers also approved car loans for white families while commonly denying loans to African American families, or approved loans but with higher payments, fees, and interest rates.

Suburbanization in the U.S. was (and is) advanced by the federal interstate highway system. The Federal Aid Highway Act of 1956 provided 90% of construction funds for a 41,000-mile network of interstate highways. Planners designed highways to open up the suburbs, in some cases literally bulldozing through urban neighborhoods (some thriving African American neighborhoods). Land use patterns in the U.S. now largely revolved around the private automobile, and arguably the commercial freight truck.

For most of the 20th century, transportation professionals considered their fundamental pursuit to be to maximize driving speeds and vehicle throughput. By the 1970s, the discourse began to realize the inefficiency and unintended consequences of relying on single-occupancy vehicle (SOV) trips as the default. "The way we build roads and design communities to achieve high vehicle speed often requires longer trips and makes shorter walking or bicycling trips unsafe, unpleasant, or impossible" (Transportation For America, 2019).

A decade or two into the 21st century, Finally, the transportation field is beginning to take seriously, at least in the discourse, the perils of the global climate crisis and the transportation sector's large output of greenhouse gas emissions. The field is also acknowledging that car-based land use patterns: require too much land (resulting in loss of natural lands and driving up land/housing costs); tend to diminish public health (air and noise pollution and sedentary lifestyles); invite speeds that make travel more dangerous (increasing mortality and the severity of injuries from car accidents); and often work in conflict with providing other transportation choices, such as public transit, walking, and bicycling (i.e., active transportation). The current paradigm sees the greater benefits of planning land use and transportation "for people not cars."

GOAL, OBJECTIVES, & POLICIES

The point of transportation is to get people where they need to go. Where people need to go is based on land use patterns. "Access" describes being able to get to where you want to go, and having quality transportation options to get there. "Accessibility" can be defined as the ease of reaching a destination or activity, and the end goal is having access to opportunities.

HCAOG shall carry out regional transportation planning with this land-use goal:

GOAL: Throughout Humboldt County, we grow communities equitably and efficiently to create safe, sustainable access to places and opportunities, while conserving or utilizing land respectfully so that future generations can also enjoy optimal land uses and value. All our communities benefit from having quality transportation choices for getting to jobs, services, and home.

OBJECTIVES: The policies listed in the Land Use-Transportation Element will help meet the RTP's main objectives (listed in alphabetical order). (Objectives are described in more detail in Chapter 2, Renewing Our Communities.)

The tree symbol indicates Safe & Sustainable Transportation objectives (see Chapter 2 for all SST objectives and targets.)

MAIN OBJECTIVES:	LAND USE-TRANSPORTATION SUB-OBJECTIVES (♦) AND POLICIES
Active Transportation Mode Share/ Complete Streets	♦ Expand healthy community development by designing neighborhoods around safe, attractive, walkable, bikeable streetscapes designed for people (not cars and trucks) and for social, cultural, economic, recreational, and residential activities. ♦ Create safe and effective walking and bicycling facilities that create neighborhood connectivity and continuity. ♦ Reduce the number and miles of work-commute trips by car. ♦ Increase percentage of all trips, combined, made by walking, biking, micro-mobility/matched rides, and transit, and decrease driving regionally and in each jurisdiction.
	POLICY LAND-1. Reduce driving: HCAOG encourages and supports land use planning and projects that accommodate reducing driving, such as through infill development, pedestrian-friendly streets, bicycle infrastructure, and transit-oriented development. HCAOG staff will provide information on transit-oriented development, as requested. HCAOG encourages member and committee agencies to engage transit operators when planning or reviewing new developments. **POLICY LAND-2. Expand transit ridership:** HCAOG advocates for and supports land use policies and programs that will enable enriched intra- and inter-regional transit service and multi-modal connections in urbanized areas throughout the county. HCAOG shall advocate for and support expanded and stable funding for transit.

Economic Vitality	◆ Increase data collection necessary to assess how well the transportation system connects people to economic opportunity. ◆ Optimize the proportion of land utilized for higher economical and sustainable purposes than storing private vehicles (i.e. free parking) foremost around key destinations where land values are premium.
	POLICY LAND-3. Sustainable tax base: HCAOG advocates for local governments to develop codes and ordinances that result in land use development patterns that will be affordable to maintain, for the life of the infrastructure, with the communities' tax base and fee revenues, and that will foster healthy municipal cash flows and affordable housing supply. **POLICY LAND-4. Nearby access to essential services:** HCAOG supports mixed-use land uses for fostering successful commercial and work opportunities near where people live, and advocates for mixed-use development patterns to include affordable housing and essential services for people with low and very low incomes.
Efficient & Viable Transportation System	◆ Coordinate transportation systems with land use for efficient, sustainable use of resources and minimize the consumption and use of finite resources such as fossil fuels. ◆ Increase data collection and assessments for active transportation connectivity, quality, and quantity in the region.
	POLICY LAND-5. Transportation for compact, mixed-use development: HCAOG shall work towards increasing coordination with land use decision-making agencies to identify and prioritize specific transportation investments needed to support compact, mixed-use development. HCAOG recognizes transit-oriented development transit service as valuable investments for achieving efficient land use. (*CTP 2050* recommended action) **POLICY LAND-6. Repurpose for compact, mixed-use development:** HCAOG will encourage and support local agencies to pursue opportunities to repurpose antiquated land uses, such as gas stations, parking lots, and large shopping centers, to support compact, mixed-use development and sustainable mobility options. *(CTP 2050 recommended action)* **POLICY LAND-7. Reduce subsidized parking costs:** HCAOG advocates for land use policies and projects that curtail the amount and/or cost of tax-subsidized parking in commercial and mixed-use areas. HCAOG will support local agencies in reducing parking minimum and/or enacting parking maximums, and will provide support in identifying funding for and implementing mobility solutions that reduce parking demand. *(CTP 2050 recommended action)*
Environmental Stewardship & Climate Protection	◆ Reduce transportation-related fossil fuel consumption in Humboldt County. ◆ Conserve open space by redirecting urban and rural sprawl towards better, more transportation-efficient land use patterns.
Equitable & Sustainable Use of Resources	◆ Expand equitable and sustainable access to jobs, education, and essential services, achieved by following holistic policies and programs that address global climate crisis, racial justice, access to affordable housing and economic opportunities. ◆ Increase percentage of electric-vehicle charging stations installed equitably in multi-family residential areas and higher density/lower-income areas.

Equitable & Sustainable Use of Resources *(continued)*	◆ Increase the percentage of attainable housing units located in places with safe, comfortable, and convenient access to employment, shopping, and recreation by walking, biking, rolling, or transit. ◆ Increase the equitable distribution of county residents who live in homes/ apartments/dorms where they can safely, comfortably, and conveniently travel to everyday destinations by walking, biking, rolling, or transit/micro-transit.
	POLICY LAND-8. Integrated long-range planning: Support local communities in developing integrated transportation and land use strategies for responding resiliently to climate change, and codifying such strategies in General Plans, Regional Transportation Plans, Local Coastal Programs, and Climate Action Plans. HCAOG will review proposed development projects in member jurisdictions and provide feedback on the projects' impacts on regional efforts to meet adopted targets for greenhouse gas emission reductions, VMT, mode shift, traffic safety, and zero emission vehicles. **POLICY LAND-9. Prioritize community needs:** HCAOG shall prioritize investments in under-resourced (disadvantaged) communities to improve mobility and access to jobs, education, health care, services, and recreation. HCAOG shall focus on investments that are aligned with community-identified transportation needs and *VROOM* goals. (*CTP 2050 recommended action*) **POLICY LAND-10. Anti-displacement:** HCAOG supports policies to protect marginalized and disadvantaged communities from displacement and community fragmentation that may result from transportation investments (e.g., tenant protections, affordable housing production, and affordable housing preservation). (*CTP 2050* recommended action)
Safety & Health	◆ Build more walkable and bikeable neighborhoods to increase active transportation for benefits to public health. ◆ Reduce VMT to foster reducing transportation-related injuries and deaths.

NEEDS ASSESSMENT

It is important for members from the whole community to participate and have a voice in assessing the community's land use needs, which are varied and complex. To name just a few, needs include affordable housing, healthy natural resources, working lands, and meeting climate adaptation, mitigation, and resilience goals. The jurisdictions of the cities and the unincorporated county have land use authority, and are responsible for having relevant long-range planning documents; chief among them are General Plans.

HCAOG is statutorily authorized and required to coordinate and ultimately adopt housing supply requirements for the jurisdictions. The process is called the Regional Housing Needs Allocation, described below.

REGIONAL HOUSING NEEDS ALLOCATION

The State of California requires jurisdictions in the state to plan for providing a "fair share" of the housing supply for residents needs statewide. HCAOG is responsible for administering the process, called the Regional Housing Needs Allocation (RHNA, pronounced "ree-na") (Government Code Sections 65580 et seq.), to establish a methodology for assessing how housing supply needs will be distributed among the seven incorporated Cities and the unincorporated County. The State, through the Housing and Community Development Department (HCD), then makes a final determination for the jurisdiction's final allocation. For Humboldt, the 6th Cycle RHNA term is an 8.7-year projection period, which began December 31, 2018 and ends on August 31, 2027.

Below are excerpts from the *Humboldt 6th Cycle RHNA* (HCAOG 2018).

> Although HCD has cited a projected population increase of only 4,978 residents over the next 8.7 years, their methodology calls for the planning of 3,390 housing units in the planning period.
>
> The opportunities and constraints to developing additional housing in each member jurisdiction include the following:
>
> - *Most cities have cited issues with increased capacity, but there is no action that would "preclude the jurisdiction from providing necessary infrastructure for additional development."*
> - *Both the City of Ferndale and the County of Humboldt cited significant limitations due to resource lands and prime agricultural soils.*
> - *High-housing cost burdens are a region-wide problem; therefore, no adjustments to the methodology based on this factor were considered.*
>
> State law requires that the final RHNA Plan shall be consistent with the following objectives:
>
> 1. Increasing the housing supply and the mix of housing types, tenure, and affordability in all cities and counties within the region in an equitable manner, which shall result in each jurisdiction receiving an allocation of units for low- and very low-income households.
> 2. Promoting infill development and socioeconomic equity, the protection of environmental and agricultural resources, and the encouragement of efficient development patterns.
> 3. Promoting an improved intraregional relationship between jobs and housing.
> 4. Allocating a lower proportion of housing need to an income category when a jurisdiction already has a disproportionately high share of households in that income category, as compared to the countywide distribution of households in that category from the most recent decennial United States census.
>
> Consistent with these objectives, the adopted methodology utilized in this plan seeks to increase housing opportunity with a mix of housing types, tenure and affordability in all jurisdictions within the region by allocating units to each jurisdiction in each income category. Each jurisdiction's allocation is trended towards the regional income category average, thus working to improve imbalances in the income distributions within the region. Existing data of income categories for each jurisdiction, compiled by HCD, is provided in Appendix B. Jurisdictions must plan and zone accordingly for different levels of density, thus making different product types available for development. Higher density zoning offers the option of providing more affordable units.

The California Legislature and Governor Gavin Newsome passed laws and budgets with concerted objectives to respond to California's housing supply shortage and homeless and houseless crises. On January 1, 2022, new laws will take effect that are intended to multiply housing production statewide, streamline the process for cities to zone for multi-family housing, and increase residential density. Senate Bill 9 (Atkins), the

California Housing Opportunity and More Efficiency (HOME) Act, allows for ministerial approval, without discretionary review or hearings, for homeowners to subdivide their current residential single-family zoned parcels or build a duplex thereon. Senate Bill 10 (Weiner) gives local governments a new process for passing ordinances (before January 1, 2029) to zone any parcel for up to ten residential units if located in transit-rich areas and urban infill sites.

Table *Land*-1. **Additional housing units needed in Humboldt County for period from December 31, 2018 to August 31, 2027***

Income Category	Percent	Housing Unit Need
Extremely-Low (12.3%) and Very Low	24.4%	829
Low	15.7%	532
Moderate	18.1%	613
Above Moderate	41.8%	1,416
Total	**100.0%**	**3,390**

*HCD Regional Housing Need Determination (August, 2018)

Table *Land*-2. **Final 2019 RHNA Allocation, by Income Category**

Jurisdiction	Very Low Income Allocation	Low Income Allocation	Moderate Income Allocation	Above Moderate Allocation	Total RHNA Allocation
Arcata	142	95	111	262	**610**
Blue Lake	7	4	5	7	**23**
Eureka	231	147	172	402	**952**
Ferndale	9	5	6	13	**33**
Fortuna	73	46	51	120	**290**
Rio Dell	12	8	9	22	**51**
Trinidad	4	4	3	7	**18**
Unincorporated Area	351	223	256	583	**1,413**
RHNA Targets	**829**	**532**	**613**	**1416**	**3,390**

Table *Land*-3. **Final 2019 Overall Regional Housing Needs Assessment (RHNA)**

Jurisdiction	EDD Employment Data	DOF Population (1/1/2018)	Jobs Distribution	Population Distribution
Arcata	10,362	18,398	22.5%	13.5%
Blue Lake	182	1,280	0.4%	0.9%
Eureka	16,956	26,362	36.8%	19.4%
Ferndale	422	1,367	0.9%	1.0%
Fortuna	3,819	12,042	8.3%	8.9%
Rio Dell	246	3,348	0.5%	2.5%
Trinidad	387	340	0.8%	0.2%
Unincorporated Area	13,754	72,865	29.8%	53.6%
Totals	**46,128**	**136,002**	**100.0%**	**100.0%**

EDD = Economic Development Dept.; DOF = Dept. of Finance

ACTION PLAN: PROPOSED PROJECTS

Table *Land Use*-1 **Regional Land Use Planning Projects**

Agency	Project Description	ST or LT*
HCAOG	**Equity evaluation criteria —** Develop social equity metrics for evaluating processes *and* outcomes of HCAOG's planning and projects. Evaluating *both* process and outcome will create accountability to ensure social equity is centered and achieved in the implementation of the policy. Policymakers should engage equity stakeholders to define the metrics. The equity metrics should identify and measure progress on economic, social, health, and environmental issues applicable to policy. Conduct regular process and outcome evaluations throughout implementation process.	ST
HCAOG	**Charging Infrastructure —** Coordinate with local land use authorities to support ZEV charging at residential developments, job centers, and public buildings, (*California Transportation Plan 2050* recommended action)	ST (and ongoing)

[1] ST: short-term is 1-10 years; LT: long-term is 11-20 years.

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7. COMPLETE STREETS & CONNECTED COMMUNITIES



Complete Streets are streets that are safe, comfortable, and convenient for everyone who uses them – people walking, bicycling, driving, or taking public transportation, whether they are children, teens, older adults, and people of all abilities, genders, races, and income levels.

– Safe Routes Partnership

The Complete Streets Act of 2008 requires California cities and counties to plan for, in adopting the circulation element of the general plan,

> a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan. (AB 1358)

The Act sets complete streets policies because

> Providing complete streets increases travel options which, in-turn, reduces congestion, increases system efficiency, and enables environmentally sustainable alternatives to single driver automotive trips. Implementing complete streets and other multi-modal concepts supports the California Complete Streets Act of 2008 (AB 1358), as well as the California Global Warming Solutions Act of 2006 (AB 32) and Senate Bill 375, which outline the State's goals of reducing greenhouse gas emissions.[1]

The Act calls on RTPAs to integrate Complete Streets policies into their RTPs and identify the financial resources necessary to accommodate such policies. The Complete Streets Act tells RTPAs to consider accelerating programming for projects that retrofit existing roads to provide safe and convenient travel by all users.



Caltrans adopted a new "Complete Streets" directive in December 2021 which commits that "all transportation projects funded or overseen by Caltrans will provide comfortable, convenient, and connected complete streets facilities for people walking, biking, and taking transit or passenger rail unless an exception is

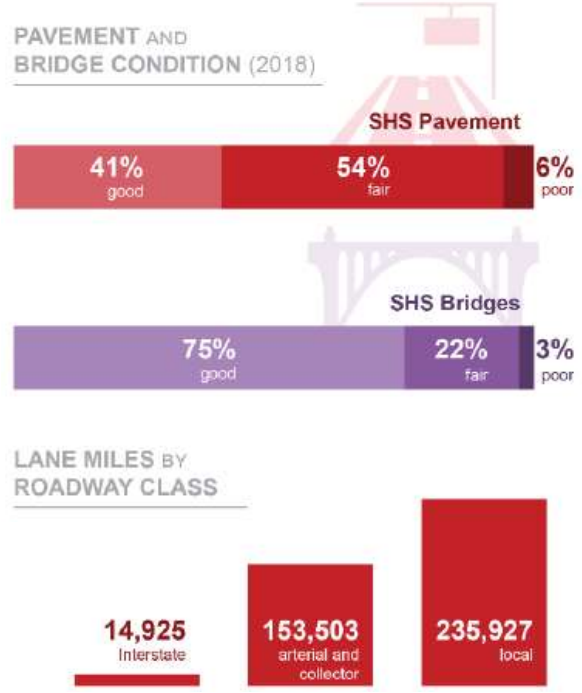
[1] "Complete Streets Implementation Action Plan 2.0," California Department of Transportation, 2014.

documented and approved." Furthermore, the policy states, "Caltrans commits to removing unnecessary policy and procedural barriers and partnering with communities and agencies to ensure projects on local and state transportation systems improve the connectivity to existing and planned pedestrian, bicycle, and transit facilities, and accessibility to existing and planned destinations, where possible" (Director's Policy DP-37).

Counties and cities maintain 81% of the maintained miles within the State of California and carry 45% of the total annual miles of vehicle travel.
– RTP Guidelines

HCAOG explicitly and consistently upholds Complete Streets policies in *VROOM*, foremost in the Complete Streets Element, and also in the Commuter Trails, Public Transportation, Global Climate Crisis, and Land Use–Transportation Elements. HCAOG has consistent policies also in the *Humboldt Regional Bicycle Plan* (2017), the *Humboldt County Regional Pedestrian Plan* (2008), and the *Regional Trails Master Plan*. These plans are incorporated into *VROOM* by reference.

The VROOM 2021 update incorporates Safe & Sustainable Transportation Targets, which include greenhouse gas emission-reduction objectives and corresponding regional targets. The policies and projects in the "Complete Streets & Connected Communities Element" have a major role to play for the region to make progress towards performance targets. As we highlighted in the "Renewing Our Communities," chapter, when we enhance our communities with complete streets, we benefit not only from less greenhouse gas emissions; we also benefit from streets that are safer for more people, and from communities that have more options for reaching important destinations.



Source: California Transportation Plan 2050, Caltrans 2020

Figure *Steets*-1 **CA State Highway & Local Roads 2018**

EXISTING ROADWAY SYSTEM

The broad use of the term "roadway" includes highways, streets, paved and unpaved roads, and bridges. The most basic function of roadways is to allow people to travel and transport goods. *How* the roadways accommodate travel affects what modes people will use to travel along them. The goal of "complete streets" design is to include all the characteristics feasible to provide safe, convenient travel for the most types of modes.

ROADWAYS: THE BUILDING BLOCKS OF CITIES

Nearly one-third of roadways in the U.S. are one mile or shorter (2009 National Household Travel Survey, California Add-On). Local roads are used most for short trips, and these trips are most conducive for alternative transportation modes (biking, walking, transit) where motorists, transit, bicyclists, and

pedestrians most commonly share space. Thus, it is where "complete streets" are the most opportune and have the highest potential/realized multi-modal use.

In Humboldt County, we have approximately 1,400 miles of county roads and city streets, 165 county bridges, and 378 miles of state highways and roadways on federal lands. Proportionately, HCAOG's members (the County and seven cities) have to maintain 79% of the road miles in Humboldt. The local system is mostly public right-of-way. Roads on private property must be maintained by the property owner, unless a public agency agrees to maintain them. State highways in Humboldt County are under the jurisdiction of the California Department of Transportation (Caltrans) District 1. Federal and/or State agencies have jurisdiction over roads within public resource lands such as parks and forests. The agencies responsible for maintaining those non-local roadways include, but are not limited to, Caltrans District 1, U.S. Forest Service, National and State Park Service, Bureau of Land Management, and Bureau of Indian Affairs. Roads owned by Native American tribal governments are maintained by them; some roads on tribal land are in the local city, County, or Caltrans District 1 jurisdiction and are maintained by the respective entity.

Different Classes of Streets/Roads



In older towns and neighborhoods in the United States (i.e., pre-automotive 19th century), streets were laid out in grid patterns, with short blocks and frequent intersections. Shops and services were interwoven with residential, sometimes industrial, and other uses. The layout was, in turns, the cause or the effect of denser development, which accommodated people to walk and bicycle to most of their errands and activities. This urban layout is commonly called European city design and traditional downtowns. In Humboldt, two examples of traditional downtowns are Old Town Eureka and the Arcata Plaza.

Another older design, generally built in smaller and more rural communities, is "Main Street," which is the commercial spine that serves as "downtown." Examples of "Main Street" downtowns in Humboldt include Main Street in Ferndale, Main Street in Fortuna, and Redwood Street in Garberville. Main Streets often also are the major transportation corridor through town. In younger rural towns, it is not uncommon for "Main Street" to be a highway, such as in Rio Dell and Orick (State Route 101), and Willow Creek (State Route 299).

As the population grew in the 20th century and private automobile ownership exploded on the scene, cities began to expand out. Since households became more mobile with their personal car, newer neighborhoods were built less dense and farther out. City grids gave way to suburban sprawl. By mid-century, city planners and traffic engineers were designing roadway networks to primarily accommodate longer, faster trips by car. The Federal Highway Administration (FHWA) invented the Functional Classification Systems, which defines a "hierarchy" of road classes, and is used to this day down to the local level. The three main road classes are local, collector, and arterial:

- Arterials are major through-roads that are expected to carry large volumes of traffic, with the primary objective of allowing the greatest speed for the longest uninterrupted distance. To increase flow, the number of intersecting streets is reduced. The "Main Street as Highway" roadway described above is usually a principal (or major) arterial. Examples of rural principal arterials are Old Arcata Road/Bayside Road, and Fieldbrook Road.

- Collectors are expected to carry lower volumes of traffic than arterial streets and presumably are used for trips of shorter distances. Speeds are lower than arterials.
- Local roads carry relatively low volumes of traffic and have the lowest speed limit of the three classifications. They are expected to be accessed for the start and destination of a trip; they are not intended for through movement. In the FHWA classification, local streets and roads are at the bottom of the hierarchy.

This road network concept presumes that a local road links to a collector road, which will link to an arterial road, and an arterial road will directly access a highway. The two major highways in Humboldt County are U.S. Highway 101 (north-south) and State Route 299 (east-west). They carry the highest volumes of passenger cars and commercial trucks. Overall, they provide adequate facilities and levels of service. Due to Humboldt's geography, geomorphology, and wet weather patterns, landslides occur seasonally along certain segments of roads and highways.

State highways in Humboldt County are as follows (mileage for portion within county):

SR 36	46 miles	Alton (U.S.101) to Bridgeville/Blocksburg
SR 96	45 miles	Willow Creek to Siskiyou County line (Highway 5)
U.S. 101	137 miles	Del Norte to Mendocino County lines
SR 169	20 miles	Wautec to Weitchpec at the junction of SR 96
SR 200	3 miles	McKinleyville (U.S. 101) to SR 299 (near Blue Lake)
SR 211	5 miles	Ferndale (Ocean Ave.) to Fernbridge (U.S. 101)
SR 254	32 miles	(Avenue of the Giants) Phillipsville (U.S. 101) to Stafford (U.S. 101)
SR 255	9 miles	Eureka (Myrtle Ave.) to Arcata (Samoa Blvd.)
SR 271	< 1 mile	Cooks Valley
SR 283	< 1 mile	Scotia (U.S. 101) to Rio Dell
SR 299	51 miles	Arcata (U.S. 101) to Trinity County line

What Makes a Complete Street?

The local system will become ever more important in supporting the goals of climate change and building sustainable communities, as local streets and roads serve as the right-of-way for transit, bicycle and pedestrian travel.
– RTP Guidelines

How do you make a "complete street"? How does a roadway accommodate all users of all ages and abilities? When planning and building the roadway system, we need to consider the needs of people who will be traveling or transporting goods via truck, automobile and motorcycle, emergency vehicle, bus, bicycle, and by foot or wheelchair. The physical and the functional will define what "complete" can mean for a roadway. The physical space available will limit how much can safely fit in the roadway. Different types of roadways will actually be "complete" at different levels. Depending on space (within the right-of-way), topography, and intended uses, a roadway will include some or all of the following characteristics: travel lane(s) for motorized vehicles, median, shoulder, bikeways, sidewalk, landscaping, on-street parking spaces (for automobiles, motorcycles, bicycles, and/or scooters), parklets, and gutters, bioswales, or ditches. Elements that add aesthetic quality to the streetscape, such as street trees and other landscaping, sidewalks, and parklets, increase safety because adding visual interest and narrowing viewscapes make drivers slow down.

Sidewalks and Crosswalks

(VROOM 2022-2042 includes, by reference, the Humboldt County Regional Pedestrian Plan, 2008).

In order to reduce VMT, people need viable alternatives that are safe, convenient and affordable. Investments in mobility options other than single occupancy vehicle use should be prioritized.

Transportation For America, 2019

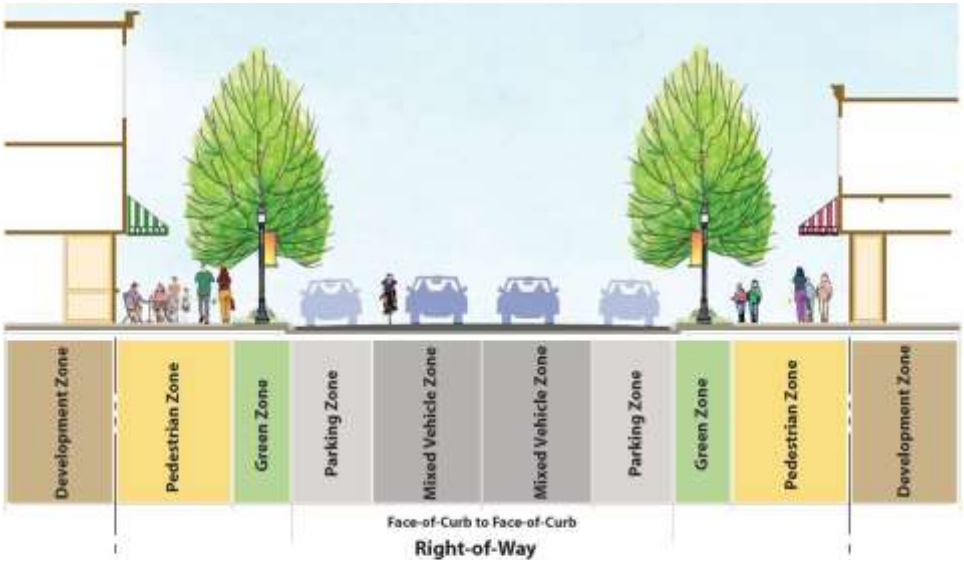
Sidewalks and crosswalks are the basic transportation facilities for pedestrians, which include people in wheelchairs and strollers. Besides sidewalks, a few examples of walkways designed primarily for pedestrian travel (not solely recreation) are the Boardwalk and PALCO Marsh path in Eureka; the Hammond Trail in McKinleyville; and Shay Park path (along Foster Avenue and railroad tracks) in Arcata. In the last five to ten years, several sidewalk gaps have been filled thanks to Safe Routes to School projects, Active Transportation Program grants, and other funding.

Where the dedicated walkway is substandard or non-existent, it creates conditions that impede pedestrian travel. Barriers for pedestrians include roads without a dedicated walkway (where pedestrians must walk in the roadway shoulder or in the travel lane); gaps in the sidewalk; uncontrolled intersections (i.e., no signal or stop sign to mediate motorized and non-motorized travelers); and substandard slopes on driveways or curb cuts. Sidewalks and crosswalks must meet ADA (Americans with Disabilities Act) standards for wheelchair users, and mobility-impaired pedestrians.

Bikeways & Bike Parking

Bike facilities include public infrastructure and private amenities that support bicycle travel. The most standard bicycle facility is a bikeway on the public right-of-way, sometimes on the sidewalk.

Humboldt's bikeways are classified according to Caltrans' definitions for Class I, II, III, and IV bikeways (see Table Streets-1). Class I is the most exclusive for bicyclists (or non-motorized modes), and Class III is the least



Source: "Urban Street Design Guidelines," City of Charlotte, 2007

Figure *Streets*-2 **A Conceptual Road Design for a "Main Street"**



Figure *Streets*-3 **Converting a right-of-way to be more effectively multi-modal**

exclusive (bicyclists share the travel lane with motorized vehicles). In 1997, the State increased the minimum width for bike lanes from four feet to five feet; consequently, many bike lanes constructed in Humboldt County before 1997 do not meet current State width standards.

In Humboldt County, most bikeways, of any class, are located in urbanized areas (excluding solely recreational trails). For example, there are several bike lanes and bike routes in Eureka, Arcata, and Fortuna, and in some urbanized unincorporated areas of the County. In District 1, bicyclists are allowed on all State highways, including freeways (*District System Management Plan,* 2012). However, most highways are not built to safely carry bicycle and motorized traffic in the same right-of-way.

The popular Hammond Coastal Trail is a multi-modal trail and the county's longest bike path so far. (When completed and connected, the Humboldt Bay Trail could be longer.). The Hikshari' Trail is a 1.5-mile multi-use trial in the City of Eureka's Elk River Access Area. The Hikshari' Trail is a segment of the contiguous Eureka Waterfront Trail. Humboldt's most prominent bicycle touring route is the Pacific

Table *Streets-1*. **Bikeway Classifications and Local Examples**

Bikeway Class[1]	Design Requirements*	Existing in Humboldt
Class I "Bike Path" (or multi-use path or shared path)	A separated, surfaced right-of-way designated exclusively for non-motorized use (can be solely for bicyclists, or can be shared with pedestrians and/or equestrians). The minimum width for each direction is 8 feet (2.4 meters), with a 5-foot (1.5 meter) minimum width for a bi-directional path.	Hammond Coastal Trail in McKinleyville (from Clam Beach to the Mad River). Eureka: Hikshari' Trail along the Elk River (Herrick/101 park-n-ride to Truesdale Avenue), Waterfront Trail (Truesdale Ave. to C St.), Waterfront Boardwalk. Arcata: 18th St. bridge-101 overpass; 7th St.-D St. connector; City Trail (along Foster Ave; Alliance Road to Samoa/SR 255) and Bay Trail North (Arcata Marsh to Bracut on 101).
Class II "Bike Lane"	Within the roadway, a lane for preferential bicycle use, at least 4 feet wide or 5 feet when next to a gutter or parking. Established by a white stripe (on roadway) and "Bike Lane" signs. Adjacent vehicle parking and motorist crossflow is allowed. On a two-way road, a bike lane is required on both sides.	Exist in Cities of Arcata, Eureka, and Fortuna, and in unincorporated McKinleyville and Orleans (Red Cap Road).
Class III "Bike Route"	A roadway that does not have a Class I or II bikeway, where bicyclists share a travel lane with motorists. Sometimes created to connect other bikeways. Can be established by a "Bike Route" sign, but not required.	Designated Bike Routes exist in Cities of Arcata, Eureka, and Fortuna, and unincorporated areas of Old Arcata Road, McKinleyville, and Myrtletown. Pacific Coast Bike Route begins on Hwy 101 at the California/ Oregon State line. In Humboldt County, it travels through Prairie Creek Redwoods State Park, Eureka City streets, and Highway 101.
Class IV "Separated Bikeway"	A bikeway to be used exclusively by bicyclists, separated from the motorized-travel lane with a	Proposed from Herrick Avenue to Truesdale Street in south Eureka.

	physical barrier. The barrier may include flexible or inflexible posts, or parked cars.	
Unclassified bikeway	Streets, roadways, and highways without features to qualify as Class I, II, or III.	All streets, roadways, and highways in Humboldt County are open to bicycle use.

[1]Bikeway classification definitions and design requirements from Caltrans' *Highway Design Manual.*

Coast Bike Route, which traverses the county north to south and is part of the California Coastal Trail. Figures 7.1 Class 1 Bikeways and Figure 7.2 Class III Bikeways (see Maps Tab), show existing and proposed bicycle routes, bicycle shops, and bicycle parking countywide. (See "Commuter Trails Element" for further trails info.)

REGIONALLY SIGNIFICANT ROADWAYS

HCAOG has not independently defined criteria for determining which roadways are "regionally significant." HCAOG generally follows the federal definition which describes a regionally significant facility as one that serves regional transportation needs. "At a minimum, this includes all principal arterial highways and all fixed guideway transit facilities that offer a significant alternative to regional highway travel" (23 CFR 450.140). Regional transportation needs include access to and from:

- the area outside the region;
- major activity centers in the region;
- major planned developments (commercial, recreation, and employment); and
- transportation terminals.

Table *Streets-2* lists regionally significant roadways identified by City and County staff.

Table *Streets-2*. **Regionally Significant Roadways**

Jurisdiction	Paved Road Miles[1]	Regionally Significant Roadways
Arcata	68.5	11th Street, Bayside Road/Old Arcata Road, Foster Avenue/Sunset Avenue, Giuntoli Lane, Janes Road/Spear Avenue, K Street/Alliance Road, L K Wood Boulevard, West End Road, U.S. 101, State Route 255, State Route 299
Blue Lake	8.4	Greenwood Avenue, Hatchery Road, Railroad Avenue, State Route 299
Eureka	114.2	6th, 7th, and 14th Streets, Buhne Street, Campton Road, Fairway Drive, H Street, Harris Street, Harrison Avenue, Henderson Street (I to Broadway), I Street (Harris to Waterfront Drive), Myrtle Avenue, S Street, V Street, Wabash, West Avenue, Waterfront Drive, U.S. 101, State Route 255
Ferndale	7.4	Arlington Avenue, Bluff Street, Centerville Road, Fifth Avenue, Main Street, Ocean Avenue, Van Ness Avenue
Fortuna	45.2	Main Street, Rohnerville Road, U.S. 101
Rio Dell	14.2	Belleview Avenue, Blue Slide Road, Monument Road, Wildwood Avenue, U.S. 101
Trinidad	3.3	Edwards Street, Main Street, Patrick's Point Drive, Scenic Drive, Stagecoach Road, Trinity Street, Westhaven Drive, U.S. 101
Humboldt County	932.0	Alderpoint Road, Bald Hills Road, Bair Road, Blue Lake Boulevard/Glendale Drive, Blue Slide/Grizzly Bluff Road, Briceland-Thorne Road, Campton Road, Central Avenue (McKinleyville), Elk River Road, Fieldbrook Road, Freshwater/Kneeland Road, Humboldt Hill Road, Maple Creek Road, Mattole Road, Old Arcata Road/Myrtle Avenue, Redwood Drive (Garberville), Rohnerville Road, Shelter Cove Road, Sprowel Creek Road, Wilder Ridge Road, New Navy Base Road, Walnut Drive, Herrick Road, Murray Road, U.S. 101, State Routes 36, 96, 169, 255, and 299
Hoopa Valley Reservation	15.3	State Route 96
Karuk Tribe	1.0	Bald Hills Road

GOAL, OBJECTIVES, & POLICIES

HCAOG shall carry out transportation planning for the regional roadway system with this goal:

safety needs of all users, including pedestrians, transit users, bicyclists, motorists, the elderly, youth, and the disabled. The region's jurisdictions have the resources to preserve, enhance, and maintain the roadway network to support complete streets and connected communities

OBJECTIVES: The policies listed in the Complete Streets & Connected Communities Element will help meet the RTP's main objectives (listed in alphabetical order). The policies below are grouped according to the RTP's main objectives

The tree symbol indicates objectives that are Safe & Sustainable Transportation objectives (Chapter 2, Renewing Our Communities, fully describes the six main objectives and lists all SST objectives and targets.)

MAIN OBJECTIVES:	COMPLETE STREETS & CONNECTED COMMUNITIES SUB-OBJECTIVES (♦) & POLICIES
Active Transportation Mode Share/ Complete Streets	♦ Maximize multi-modal access to the roadway system and eliminate barriers to non-motorized transportation. ♦ Expand and maintain a regional network of inter-connected pedestrian and bicycle facilities. Create safe and effective walking and bicycling facilities that create neighborhood connectivity and continuity. ♦ Support and implement projects and policies that increase biking and walking, especially for short trips, first/last mile transit trips, and school trips. ♦ Increase percentage of all trips, combined, made by walking, biking, micro-mobility/matched rides, and transit. ♦ Reduce VMT per capita ♦ Increase regional discretionary funding set aside for permanent infrastructure, pop-ups, pilots, or other projects for active transportation. ♦ Secure new funding sources at the regional level and/or the city/county level to benefit active transportation and transit.
	POLICY STREETS-1. Multi-modal safety & functionality: HCAOG shall encourage and facilitate local jurisdictions, local Native American Tribes, Caltrans, and non-profits to individually and collaboratively plan, design, install, and maintain roads in Humboldt County to build a transportation system that emphasizes safety over speed, and emphasizes multi-modal functionality over convenience for single-occupancy automobiles. **POLICY STREETS-2. Humboldt Bay Trail:** HCAOG recognizes the Humboldt Bay Trail, and planned connections and envisioned extensions, as a regional priority multi-use trail, and supports multi-jurisdictional, public, and private efforts to develop and maintain it. **POLICY STREETS-3. Complete Streets improvements** HCAOG shall include Complete Streets improvements in regionally-funded transportation system projects to the extent feasible, as consistent with California Complete Streets Act of 2008 (AB 1358) and Caltrans Deputy Directive 64-R2.
Economic Vitality	♦ Increase data collection necessary to assess how well the transportation system connects people to economic opportunity.

	POLICY STREETS-4. Sharing Economy: HCAOG shall pursue efforts to increase shared mobility options in the region, such as car share and bike share programs. HCAOG shall work to make shared mobility programs equitably available to people with low-incomes and other transportation disadvantages.
Efficient & Viable Transportation System	◆ Maintain the roadway system in a condition that maximizes resources and uses, and minimizes disruptions and costs. Increase data collection and assessments for active transportation connectivity, quality, and quantity in the region.
	POLICY STREETS-5. Stable funding: HCAOG shall pursue local options for developing a funding program(s) to help maintain and preserve the regional roadway system, and fund non-infrastructure programs and planning for active transportation projects. HCAOG shall help secure the financial resources necessary to accommodate HCAOG's policies adopted in the *Regional Bicycle Plan*, *Regional Transportation Plan (VROOM)*, *Regional Master Trails Plan*, and *Regional Pedestrian Plan*. **POLICY STREETS-6. Fix it first for safety:** HCAOG will accelerate programming for regional projects that retrofit existing roads to provide safe and convenient travel by all users. HCAOG supports a "fix it first" priority of protecting and preserving existing roadways and other transportation assets, with priority for communities that have been underinvested in or have borne disproportionate levels of harm from transportation infrastructure. *Also applicable:* **Bike Plan Policy 4.3–BLOS/BQOS:** HCAOG shall use the Bicycle Level of Service and Quality of Service (BLOS/BQOS) and the Bicycle Compatibility Index as tools for assessing bicycle facility needs and prioritizing projects, along with equity criteria.
Environmental Stewardship & Climate Protection	◆ Promote "Complete Streets" policies and projects to reduce CO_2 emissions and the adverse environmental impacts of motorized transportation on land, sea, and air.
	POLICY STREETS-7. Global Warming Solutions: HCAOG shall carry out policies and program funding for projects that will help achieve the goals of the Global Warming Solutions Act (California Assembly Bill 32 (2006) and Senate Bill 32 (2016)). This shall include supporting efforts to reduce non-renewable consumption and air pollution, such as projects that increase access to alternative transportation and renewable fuels, reduce congestion, reduce single-occupancy (motorized) vehicle trips, and shorten vehicle trip length, and reduce greenhouse gas emissions.
Equitable & Sustainable Use of Resources	◆ Increase the percentage of attainable housing units located in places with safe, comfortable, and convenient access to employment, shopping, and recreation by walking, biking, rolling, or transit. ◆ Increase the equitable distribution of county residents who live in homes/ apartments/dorms where they can safely, comfortably, and conveniently travel to everyday destinations by walking, biking, rolling, or transit/micro-transit.
	POLICY STREETS-8. Land and natural resources: HCAOG shall pursue a multi-modal transportation system that follows a less exhaustive, less polluting, and more sustainable use of natural resources than the land-intensive car-centered transportation system. **POLICY STREETS-9. Equity programming for roads and trails:** HCAOG shall promote equity, cost effectiveness, safety and active transportation in programming and allocating funds to regionally significant roadway and trail projects.

Safety & Health	◆ Improve overall safety for motorists, bicyclists, pedestrians, and transit users on all county, city, and state highways and streets. ◆ Prioritize programming resources for projects designed to reduce deaths and serious injuries on our roadways, and for approaches that prioritize lowering speeds on local and arterial roads. ◆ Increase the number of active transportation users and drivers who receive educational messaging about roadway safety. ◆ Decrease to and maintain zero traffic fatalities and serious injuries per year regionwide. ◆ Expand the reach and occurrences of safe active transportation infrastructure to improve public health and safety.
	POLICY STREETS-10. Safe routes to school and transit: To advance Safe Routes to School and Safe Routes to Transit initiatives, HCAOG shall support jurisdictions to establish and maintain safe pedestrian paths and designated bikeways within one mile of all public schools and public transit connections. **POLICY STREETS-11. Vision Zero:** HCAOG adopts the Vision Zero commitment to support policy, strategies, and roadway design standards that have been shown to be most effective in improving safety, with the goal of eliminating all traffic fatalities and severe injuries in Humboldt, while increasing safe, healthy, equitable mobility for all users. **POLICY STREETS-12. Traffic data:** HCAOG shall assist regional and local efforts to expand the means to collect relevant and meaningful data on traffic statistics, including use by mode and rates of traffic-related accidents, injuries, and fatalities. **POLICY STREETS-13. Active transportation education:** HCAOG shall program, support, and collaborate in campaigns to educate active transportation users and drivers about using the roadways safely, and about other transportation-related public health goals and outcomes.

NEEDS ASSESSMENT

ROADS NEEDS ASSESSMENT

To assess how a roadway is performing, key factors are safety, capacity, physical condition, and direct and indirect environmental impacts. How a roadway performs will tell what its needs are. The combined needs of the roads in the network will tell how the broader roadway system is functioning.

- *Safety* – The roadway system must not subject people (or property) to hazardous conditions that risk their safety.
- *Capacity* – The roadway system's capacity must be able to safely and functionally accommodate all road users. For the past few generations, the dominant transportation planning paradigm has been that roadway capacity had to increase to keep up with population growth and increased vehicle volumes. The practice has been to add lanes to reduce congestion. Decades of outcomes have proven that this tactic does not add capacity. Today the field is shifting the paradigm to address capacity issues with multi-modal options and better land use planning to avoid, rather than prioritize, high-speed, long-distance car travel.

- *Environmental impacts* – Transportation planning must address greenhouse gas emissions and the fuel and energy consumed for building, using, and maintaining roadways and other infrastructure for motorized transportation. Impacts to land, water, and air resources must be assessed, and minimized to the extent feasible.
- *Maintenance & rehabilitation* – Humboldt County's pavement condition index (PCI, a 100-point weighted average) rated 56 for 2010, and 64 for 2012. Roads rated between 50 and 70 are considered "at risk" (per "California Statewide Local Streets and Roads Needs Assessment," January 2013). Humboldt roads are being assessed again in 2021-2022.

Throughout California, counties are having trouble keeping up with the costs of consistently maintaining and rehabilitating their roadways. The system suffers from "chronic road maintenance funding shortfalls." The challenge is greater in rural counties because their low population densities mean there are more miles of roadway with less people to pay for them. Rural areas generate fewer funds per road mile. Like other California counties, Humboldt has had a backlog of road maintenance needs for decades. The current backlog, estimated as of September 2021, is over $303 million (see Table *Streets-3*)

With vehicle miles traveled increasing every year, we'll never achieve ambitious climate targets if we don't reduce driving.

– Transportation For America, 2019

All California counties receive more transportation funding from new accounts and programs created by the passage of California Senate Bill 1 (April 2017). The new funds include $1.5 billion annually for repairing, rehabilitating, and maintaining local streets and roads statewide. These particular funds are appropriated by formula, not by competitive grants, which allow jurisdictions to plan on continuous, stable funding for road maintenance. (See chapter 9, Financial Element, for more information on SB1.)

LEVEL OF SERVICE & VEHICLE MILES TRAVELED

It has been standard practice for transportation planning agencies and departments in the U.S. to assess and project existing and future road traffic conditions using the "level of service" (LOS) concept, which forecasts how congested or free-flowing a traffic lane or intersection will be during peak traffic hours. The LOS is represented by a "grade" from A to F. LOS A generally indicates no traffic congestion, and F indicates heavy congestion. The LOS concept has been primarily applied to driving conditions, but with more attention paid recently to multi-modal travel, people have been devising bicycle LOS and pedestrian LOS models as well, as discussed below.

In project planning, LOS has been used as a threshold for traffic impacts. Many jurisdictions nationwide, including in Humboldt County, have policies making LOS C the lowest acceptable grade, and/or LOS D under certain circumstances. Projects that would cause traffic conditions to fall below the established minimum LOS grade are then deemed a significant

Table *Streets*-3. **Roadway Maintenance & Rehabilitation Backlog** (September 2021)

Jurisdiction	**Total** (000s)
Arcata	$13,800
Blue Lake	$1,500
Eureka	$29,100
Ferndale	$2,900
Fortuna	$19,900
Rio Dell	$3,6000
Trinidad	$ 600
County of Humboldt	$210,300
Hoopa Valley Tribe	$21,600
Total	**$303,300**

Data provided by jurisdictions and PCI reports.

Network and Gap Analysis
FHWA defines networks as interconnected pedestrian and bicyclist transportation facilities that allow people of all ages and abilities to safely and conveniently get where they want to go. The following network principles can be used to evaluate the condition of a network and the value added by proposed projects:
• **Cohesion:** How connected and linked together is the network?
• **Directness:** Does the network provide access to destinations along a convenient path?
• **Alternatives:** Is only one transportation option available or does the network enable a range of mode and/or route choices?
• **Safety and Security:** Does the network provide real and/or perceived freedom from risk of injury, danger, or loss of property?
• **Comfort:** Is the network appealing to a broad range of age and ability levels and is consideration given to user amenities?

– Statewide Pedestrian and Bicycle Planning Handbook, FHWA

impact. However, a new law regarding the California Environmental Quality Act (CEQA), has mandated an alternative approach.

Senate Bill 743 (Steinberg, 2013) ushered in a new approach to addressing and mitigating environmental impacts of traffic through the California Environmental Quality Act. The legislative intent is to "more appropriately balance the needs of congestion management with statewide goals related to infill development," active transportation, and GHG emissions. SB 743 aims to reduce GHG emissions by removing barriers to infill development, and multiplying projects that increase walking and biking and public transportation infrastructure and facilities. To that end, the State amended CEQA Guidelines to replace LOS with vehicle miles traveled (VMT) as the most appropriate measure of project transportation impacts.

Lead agencies may no longer deem automobile delay a significant impact under CEQA. The amended Guidelines also advise that projects for roadway rehabilitation, transit, bicycle and pedestrian infrastructure, or that propose development near transit, should be considered to have a less than significant transportation impact (CEQA Statute, Public Resources Code §15064.3). The new regulations became mandatory statewide on July 1, 2020.

BICYCLE & PEDESTRIAN NEEDS ASSESSMENT

To completely integrate pedestrian and bicycle modes into the transportation system, HCAOG must help meet the principal needs of existing pedestrian and bicycle facilities:

- Access & Choice – While commuting by foot or by bicycle is a choice for some, many others use these modes out of necessity. Children, high school and college students, seniors, and people with low incomes often do not have access to other transportation modes. The streets and roadway network must meet minimum ADA standards to be accessible to wheelchair users, vision-impaired and other pedestrians.
- Connectivity & Links – Pedestrians and bicyclists frequently utilize roads in Humboldt County that lack sidewalks and/or bicycle lanes or bike routes. A number of communities are bisected by busy state routes, or county roads with no (or limited) crossing facilities.
- Safety – The *Humboldt County Pedestrian Needs Assessment Study* (HCAOG, 2003) concluded that better pedestrian access and improved safety conditions are required to ensure that our communities are walkable, safe, vibrant places to live. Improved safety also hinges on better rider/driver education, awareness, and road etiquette.
- Maintenance/Upkeep – When roads lack timely maintenance, deteriorated conditions such as potholes and debris can pose safety concerns for bicyclists and other users.

Bicycle and pedestrian needs were assessed, in part, from information in the *Humboldt Regional Bicycle Plan* (HCAOG, 2017) and the *Humboldt County Pedestrian Needs Assessment Study* (HCAOG, 2003).

Bicycle Level of Service Modeling

Bicycle level of service (BLOS) modeling helps predict how a given bicycle facility will function for cyclists., For example, the BLOS will estimate the speed and density a cyclist would experience while riding in an existing or proposed bike lane. The bicycle LOS can be expressed on a scale of A to F. For a full discussion of Bicycle LOS, refer to the *Humboldt Regional Bicycle Plan* (2012) (available at www.hcaog.net/projects).

Bicycle LOS modeling can also help predict how cyclists perceive the safety or hazard level of a facility. Generally, cyclists feel safer riding where there is more room and less traffic. Perceived hazards include proximity to motor vehicles, deteriorated pavement, roadway debris, high speeds, and intersections without traffic controls (e.g. stop signs). Bicycle LOS can evaluate these conditions. Other factors of perceived safety/hazards are the cyclist's skill level and riding experience, which LOS does not measure.

Generally, cyclists choose their routes, or whether to ride at all, based on how they perceive hazardous conditions (for some local perspectives, see *Humboldt Bay Area Bicycle Use Study*, RCAA 1999). Therefore, one strategy for increasing bicycle ridership is to prioritize projects that will eliminate or minimize perceived hazards to bicyclists.

ACTION PLAN: PROPOSED PROJECTS

Table *Streets-4*, below, lists short-term (0-10 years) and long-term (11-20 years) streets/roadway projects for the regional "complete streets" system. The table compiles project lists from the seven incorporated cities, unincorporated County, and Tribes that sit on HCAOG's Technical Advisory Committee. TAC members self-reported whether or not their respective proposed projects would help achieve one or more of the objectives:

- ☐ Mode shift to active transportation;
- ☐ Lowering vehicle miles traveled (VMT) from cars and trucks;
- ☐ Access to essential destinations by walking, biking, and/or public transportation;
- ☐ Vision Zero, the goal to eliminate all traffic deaths and severe injuries; and/or
- ☐ Fix-It-First priority for keeping existing investments in a "state of good repair" over building new infrastructure.

These are some of the objectives from the RTP's Safe & Sustainable Transportation Targets. (See Chapter 2, Renewing Our Communities, for full SST Targets table.) Generally speaking, we expect that projects that will meet the most objectives/targets will be the top priorities.

See Appendix E for Caltrans District 1 project lists for State Highway Operation and Protection Program (SHOPP), Project Initiation Documents (PID), and State Transportation Improvement Program (STIP) projects.

For a more detailed, comprehensive description of each jurisdiction's bikeway facility improvements (constrained and unconstrained), refer to the *Humboldt Regional Bicycle Plan* (HCAOG 2017), and the respective bikeway master plans for the City of Arcata, City of Eureka, and County of Humboldt (available at the HCAOG office and online at www.hcaog.net. To view a city's bike plan, contact its Public Works Department.)

Table *Streets*-4 **Complete Streets Projects for Cities, County, Tribes –Short-Term & Long-Term**

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
HCAOG										
Low-traffic-stress and connectivity analysis of bike and ped network	ST	X					Analyze network in the Greater Humboldt Bay Area by FY 2023/24, and countywide by 2026	RPA, LTF	2023-2026	$250
							HCAOG ST Subtotal = $250	**Constrained = $250**		
CITY OF ARCATA										
Old Arcata Road; Buttermilk to Jacoby Creek Road	ST	X		X	X		Rehabilitation, pedestrian-bicycle and calming improvements, gateway at Jacoby Creek Road	STIP, Measure G, ATP	2022-24	$4,124
Residential streets citywide	ST			X			Annual residential streets improvement program (see City's PMP)	Measure G	2022-31	$3.000
Hwy 255 at Hwy 101 – Roundabouts	ST	X		X			Convert cloverleaf intersection to 2 roundabouts, pedestrian-bicycle access across bridge (non-existent), add transit park-and-ride, remove 1 mile paved roadway (mitigation)	Not funded	2022-31	$8,000
Hwy 101 at Sunset and L.K Wood Boulevard – Roundabout	ST	X		X	X		Convert 5-way intersection to roundabout and create safer segregated bicycle/pedestrian facilities	Not funded; City match	2022-31	$3,500
Guintoli Lane-Hwy 299 intersections, Valley West and Valley East to West End Road	ST			X			Rehab, restripe and improve level of service (roundabouts or channelization). Potential bus park-and-ride at Wymore Road	Measure G, grant funds* (TBD)	2022-31	$2,200
Annual Roadway Improvements Project (based on city PMP)	ST			X			Principally on city bus routes; arterial and collectors (refer to City PMP)	Measure G, grant funds* (TBD)	2022-24	$10,000
South G street Beautification Project (South of Samoa 255 to Arcata wastewater treatment plant)	ST	X		X			Rehabilitation, pedestrian-bicycle and traffic calming improvements	Measure G, grant funds* (TBD)	2022-2031	$3,000
Samoa Gateway Improvements Project (From L street to V street)	LT	X		X	X		Rehabilitation, pedestrian-bicycle, traffic calming improvements and gateway to Arcata	Measure G, grant funds* (TBD)	2022-2031	$3,000
West End Road Improvements (Giuntoli Lane to City Limits)	ST	X		X	X		Rehabilitation, pedestrian-bicycle, traffic calming improvements and gateway to Arcata	Measure G, grant funds* (TBD)	2022-2031	$2,000
8th and 9th Street Improvements	ST	X		X			Bicycle and Pedestrian Enhancements and Street Beautification	Infrastructure Improvements Grant	2022-2031	$1,500
							Arcata ST Subtotal = $34,327 **Arcata LT Subtotal = $3,000** **Subtotal = $37,327**	**Constrained = $7,124** **Unconstrained = $30,203**		

[1] Short-term is 0-10 years; long-term is 11-20 years. Projects with unknown implementation years are listed as long-term.

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
CITY OF BLUE LAKE										
South Railroad Avenue from Chartin Way to Broderick Lane	ST				X	X	Repave, rehab and reconstruction	Not funded	2025/26	$1,150
Greenwood Road/Railroad Ave/G Street/ Hatchery Road, from Blue Lake Boulevard to Mad River Bridge	ST	X		X	X	X	Rehab and reconstruction with pedestrian improvements, bike lane striping, signage, and traffic calming	Not funded	2022/23	$3,380
Hartman Lane/G Street, from Blue Lake Boulevard to Railroad Avenue	ST				X	X	Rehab and reconstruct with pedestrian improvements	Not funded	2020/21	$1,400
I Street, from Blue Lake Boulevard to First Avenue	ST	X			X	X	Rehab and reconstruct with pedestrian improvements	Not funded	2023/24	$1,200
First Ave from Greenwood Ave to I Street	ST				X	X	Rehabilitation and reconstruction with pedestrian improvements	Not funded	2024/25	$1,500
Acacia Dr from Blue Lake Blvd to Railroad Ave	ST				X	X	Rehabilitation and reconstruction with pedestrian improvements	Not funded	2027/28	$2,480
Rymar Ave from Blue Lake Blvd to Railroad Ave	ST				X	X	Rehabilitation and reconstruction with pedestrian improvements	Not funded	2028/29	$1,720
Railroad Ave from H St to Blue Lake Blvd	ST	X		X	X	X	Rehabilitation and reconstruction with pedestrian improvements	Not funded	2029-30	$3,630
							Blue Lake ST Subtotal = $16,460 **Blue Lake LT Subtotal = $0** **Subtotal = $16,460**	**Constrained = $0** **Unconstrained= $16,460**		
CITY OF EUREKA										
Broadway Multimodal Corridor – Northern Section (Hawthorn to 4th)	LT	X		X	X		Street reconfiguration, Class IV bike facility, pedestrian crossings, transit improvements	Not Funded	2032	$72,000
Broadway Multimodal Corridor – Middle Section (Truesdale to Hawthorn)	LT	X		X	X		Street reconfiguration, Class IV bike facility, pedestrian crossings, transit improvements	Not Funded	2032	$98,000
North Gateway of Eureka	LT	X			X		Beautification, bike/ped facilities, traffic calming	Not funded	2032	$2,350
South Gateway of Eureka	ST	X			X		Beautification, bike/ped facilities, traffic calming	Partially with Caltrans SHOPP	2023/24	$2,015
Harrison Ave from Harris St to Myrtle Ave	ST	X			X		Two-way left-turn lane, bike lanes, bus pullouts	Not funded	2023/24	$2,390
Harris Street from H Street to J Street	ST			X	X		Signalization and signalization modifications	Not funded	2023/24	$835
Henderson Street from I Street to Fairfield Street	ST	X			X	X	Road rehabilitation, ADA, bicycle lanes, bus pullouts, storm drains	Not funded RMRA	2021/22	$796
Myrtle Ave from 5th St. to Harrison Ave	ST	X				X	Street configuration improvements, ADA, bicycle facility	Not funded	2023/2024	$600

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
C Street Bike Boulevard	ST	X			X		Bike Boulevard and pedestrian improvements	Not funded	2023/2024	$1,250
M Street Bike Boulevard	ST	X					Bike Boulevard and pedestrian improvements	Not funded	2023/2024	$520
Eureka East/West Bike Boulevard	ST	X					Bike Boulevard and pedestrian improvements	Not funded	2024/2025	$1,275
Bay to Zoo Trail	ST	X					Class I & III trail, pedestrian crossing improvements	Not funded	2023/2024	$7,800
Cooper Gulch Trail (first slough)	ST	X					Class I & III trail, pedestrian crossing improvements	Not funded	2023/2024	$1,560
Eureka Loop Trail	ST	X					Class I & III trail, pedestrian crossing improvements	Not funded	2024/2025	$10,800
Wabash Ave Improvements	ST	X				X	Road rehabilitation, ADA, pedestrian improvements, bicycle facility	Not funded	2023/24	$650
Hawthorn Street from Broadway to Felt, Felt St. from Hawthorn to Del Norte, and 14th St. from Broadway to West Avenue	ST					X	Road rehabilitation, ADA, bicycle facility	STIP	2021/22	$650
Highland Avenue from Broadway to Utah Street and Koster Street from Del Norte to Washington Street	ST					X	Road rehabilitation, ADA	STIP	2021/22	$650
6th and 7th Streets from-Myrtle Avenue to Broadway	ST	X			X	X	Road rehabilitation, ADA, bike lanes, bus pullouts	HSIP	2021/22	$1,058
H & I Street Corridors	ST					X	Road rehab, ADA, bicycle facility and bus pullouts	HSIP	2022/23	$2,110
Citywide	ST	X	X	X			Improve transit stop pullouts	Not funded	2024/25	$610
Walnut Drive at Hemlock Street	ST				X		Traffic signalization	Not funded	2023/24	$360
Citywide	ST	X	X		X		Bicycle facilities per *Humboldt Regional Bicycle Plan 2017*	Not funded	2023/24	$3,870
Citywide	ST	X	X		X		Ped improvements per *Humboldt Regional Pedestrian Plan 2008*, and other reports	Not funded	2023/24	$1,000
							Eureka ST Subtotal = $40,799 **Eureka LT Subtotal = $172,350** **Total = $213,149**	**Constrained = $4,468** **Unconstrained= $208,681**		
CITY OF FERNDALE										
Rose Avenue/Herbert Street – East City limits to Main Street	ST	X	X	X			Class II bike path	Not funded	2024	$26
5th Street: Van Ness Ave to Ocean Ave	ST	X	X	X			Class II bike path	Not funded	2024	$16
Arlington Avenue - 5th Street to Main St	ST	X	X	X			Class II bike path	Not funded	2024	$22
Ocean Ave - West City limits to East City limits	ST	X	X	X			Class II bike path	Not funded	2024	$25
Wildcat Road - Ocean Avenue to south City limits	LT	X	X	X			Class III bike path	Not funded	TBD	$1
Main Street: Ocean Avenue to north City limits	LT	X	X	X			Class III bike path	Not funded	TBD	$38
Van Ness Avenue: 5th Street to Main St	LT	X	X	X			Class III bike path	Not funded	TBD	$1

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
Shaw Avenue: Ocean Avenue to Berding	LT	X	X	X			Class III bike path	Not funded	TBD	$37
Ocean Avenue: Strawberry Lane heading east towards trailhead	LT	X	X	X			Multipurpose trail (Class 1 bike path)	Not funded	TBD	$36
5th Street: Van Ness to Ocean Avenue	LT	X	X	X			Multipurpose trail (Class 1 bike path)	Not funded	TBD	$174
Lincoln Street - Grant Avenue to East City limits	LT	X	X	X			Multipurpose trail (Class 1 bike path)	Not funded	TBD	$12
Ocean Avenue - Craig Street to Russ Park trailhead	LT	X	X				New sidewalk	Not funded	TBD	$98
5th Street - Arlington Avenue to Fairview North and piece on Arlington Avenue	LT	X	X	X			Curb and gutter and new sidewalk	Not funded	TBD	$54
Berding Street-Rose Avenue to Lewis St	LT			X			New sidewalk (Ped 2)	STIP	TBD	$50
Rose Avenue - Berding to Herbert Street	LT			X			New sidewalk (Ped 2)	STIP	TBD	$147
Main Street - North City limits to Arlington Avenue; citywide	LT			X		X	Misc. ADA improvements	Not funded	TBD	$150
Main Street - Arlington Avenue to Ocean Avenue (Caltrans)	LT			X		X	Misc. ADA improvements		TBD	$600
Francis Street - Ocean Avenue to Ferndale Public Works Building	LT					X	Roadway rehabilitation	Not funded	TBD	$80
Berding Street - Herbert Street to Eugene	LT					X	Roadway rehabilitation	Not funded	TBD	$1,400
							Ferndale ST Subtotal = $89 **Ferndale LT Subtotal = $2878** **Subtotal = $2,967**	**Constrained = $0** **Unconstrained = $2,967**		
CITY OF FORTUNA										
Rohnerville Road: Newell St. to Redwood Way	ST	X		X	X	X	Reconstruct w/ sidewalk and bike lanes	Not funded	2022/2023	$4,500
Fortuna Boulevard: Redwood Way to Kenmar Road	ST	X		X	X	X	Overlay w/ bike lane improvements	Not funded	2021/2022	$2,000
U.S. 101/12th Street northern interchange onramps, Dinsmore Drive	ST	X	X	X	X	X	Reconfigure interchange to include roundabout and bike/pedestrian facilities	Not funded	2022/2023	$14,000
U.S. 101/Riverwalk Drive southern interchange Improvements	ST	X	X	X	X	X	Reconfigure interchange to include roundabout and bike/pedestrian facilities	Not funded	2022/2023	$12,000
U.S. 101/Kenmar Road Interchange Improvements	ST	X	X	X	X	X	Reconfigure interchange to add two roundabouts and bicycle/pedestrian facilities	STIP	2022/2023	$6,500
South Fortuna Boulevard/Ross Hill Road/Kenmar Road	ST	X		X	X		Pedestrian improvements including adding sidewalk, bike lane and retaining wall	Not Funded	2024/2025	$600
Thelma and Ross Hill Road	ST				X	X	Install roundabout	Not Funded	2025/2026	$660
Various locations: Riverwalk Drive, Fortuna Boulevard, Rohnerville Road	ST	X	X	X	X		Strongs Creek Trail Phase 1–Class I bike lane through Fortuna and Class II bike lanes on city streets	Not Funded	2026/2027	$4,600

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
							Fortuna ST Subtotal = $44,860	**Constrained**	**= $ 6,500**	
							Fortuna LT Subtotal = $0	**Unconstrained**	**= $38,360**	
							Subtotal = $44,860			
CITY OF RIO DELL										
Wildwood Avenue from Eagle Prairie Bridge to Davis Street	LT	X			X	X	Transportation enhancement project adding raised center median and striped bike lanes	State Transp. Enhancement	TBD	$589
The Avenues Area, from Elko Street to Atlanta Street	LT	X			X	X	Full roadway rehabilitation to improve pedestrian safety and accommodate emergency response vehicles	Not funded	TBD	$500
2nd Avenue., Davis Street to Columbus Street	LT					X	Maintenance paving project including 2" overlay and striping	Not funded	TBD	$106
Ogle Avenue, Spring Street to Creek Street	LT					X	Road reconstruction and drainage improvements	Not funded	TBD	$1,000
Monument Road, Dinsmore Ranch Road to Redwood Lane	LT					X	Drainage improvements including new inlets, valley gutter, ditch and storm piping	Not funded	TBD	$149
Riverside Drive, Eagle Prairie Road to Fern Street	ST					X	Maintenance paving project including 2" overlay, with drainage improvements, and striping	Not funded	2022/2023	$357
Northwestern Ave, north entrance to south entrance, Humboldt Rio Dell Business Park	LT				X	X	Centerline and edge striping, centerline monument, drainage, road elevation repair	Not funded	TBD	$300
Ireland Ave., Davis St. to Painter Street and Dixie Street, 4th Avenue to Davis	LT	X				X	Maintenance paving (2" overlay), striping, and bikeway signage	Not funded	TBD	$100
Monument Road at Dinsmore Ranch Road	ST					X	Replacement of a failing timber post retaining wall	FEMA	2022	$1,000
Belleview Avenue, Spring Street to 300 ft east and 750 ft east of Creek Street to 100 ft west of Creek Street	LT					X	Maintenance paving project, including 2" overlay and striping.	Not funded	TBD	$112
Elm Street–Pacific to Wildwood Ave; Orchard Place–Cherry Ln to Orchard St; Cedar Street–Pacific to Wildwood Ave; View Street–Douglas St to Kelly St	LT					X	Maintenance paving project, including 2" overlay and striping.	Not funded	TBD	$109
Blue Slide Road – City limits to Creek Street	LT					X	Drainage work, and chip seal	Not funded	TBD	$100
Wildwood Avenue, Center to Eagle Prairie Bridge	LT					X	Slurry seal and striping	Not funded	TBD	$250
Sequoia Avenue at Dean Creek Bridge	LT					X	Bridge inspection and engineering report	Not funded	TBD	$50
W. Painter Street–Pacific Ave–Butcher Street—Rio Dell Ave–W. Center St–Townsend St	ST					X	Maintenance paving project, including 2" overlay and striping	Not funded	2022	$95
Davis Street, Gunnerson Lane to Edwards Drive and Edwards Drive from Water Treatment Plant to Davis Street	LT	X	X	X	X		Sidewalk, Class III bikeway and Class I bike and pedestrian path along Eel River gravel bar, including two trailheads	Not funded	TBD	$1,800

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
Belleview Ave., Painter St., Ireland St., Center St., and Davis St.	ST	X	X		X		Improve sidewalk, ADA crossings and curb ramps, and crosswalks.	Not funded	TBD (ST)	$1,715
Eel River bar, Davis Street to Eeloa Avenue	ST	X	X	X	X		Class I bike and pedestrian path along Eel River bar, including two trailheads	Not funded ATP/Prop 68	2025/26	$947
Railroad ROW, Eagle Prairie Bridge to Northwestern Avenue	ST	X	X	X	X		Class I bike and pedestrian path next to railroad tracks	Not funded	2027/28	$2,394
							Rio Dell ST Subtotal = $6,508 **Rio Dell LT Subtotal = $5,165** **Subtotal = $11,673**	**Constrained = $1,000** **Unconstrained = $10,673**		
CITY OF TRINIDAD										
Downtown Trinidad: Patrick's Point Drive (Main St to Janis Ct), Scenic Drive (Main St to Saunders Shopping Center driveway), Trinity Street (Edwards St to Main St)	ST	X	X		X		Pedestrian & connectivity improvements: sidewalks, driveways & curb ramps, crosswalks, signage, striping, and pavement repair (ADA). (1,200 feet ped/bike facilities)	RTIP	2020/2021	$580
Edwards St, Main St	ST	X	X		X		Crossing Enhancements	HSIP	2021/22	$250
Stagecoach Rd, Frontage Rd, Westhaven Dr	ST				X		Edgeline and Centerline Striping	HSIP	2021/22	$133
Scenic Dr, Patrick's Point Dr	ST				X		Guardrail Upgrades	HSIP	2021/22	$417
Patrick's Point Drive	ST					X	Rehabilitation	Not funded	2025/26	$161
Main Street (south side of road)	ST	X	X		X		Sidewalks, driveways & curb ramps	Not funded	2026/27	$452
Main St, Trinity St*, Westhaven Dr *Trinity St. recommended for STIP funding	ST					X	Rehabilitation	Not funded*	2026/27	$732
Edwards Street	ST					X	Rehabilitation	Not funded	2028/29	$575
Frontage Road	ST					X	Rehabilitation	Not funded	2030/31	$475
Parker Creek Drive	LT					X	Reconstruction	Not funded	2031/32	$241
Edwards Street to Ewing Street	LT	X	X		X		Sidewalks, driveways & curb ramps	Not funded	2032/33	$801
Edwards Street	LT			X		X	Retaining wall	Not funded	TBD	$1,500
							Trinidad ST Subtotal = $1,541 **Trinidad LT Subtotal = $4,776** **Subtotal = $6,317**	**Constrained = $963** **Unconstrained = $5,354**		

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
COUNTY OF HUMBOLDT										
Honeydew Bridge	ST			X		X	Replace existing bridge	HBP	TBD	$6,600
Central Avenue	ST	X	X	X	X	X	Shoulder widening & overlay	Not funded	TBD	$900
Harris & Hall	ST			X		X	Safety improvements	Not funded	TBD	$500
McKinleyville Avenue Extension	ST	X	X	X	X		Connect to School Road	Not funded	TBD	$1,500
Garberville downtown	ST					X	Vehicle, pedestrian and bicycle improvements	Not funded	TBD	$8,000
Hoopa Downtown Corridor Project	ST	X	X	X	X	X	Context sensitive modifications (County portion only)	Not funded	TBD	$500
Manila Hwy 255 from Dean St/Pacific Ave intersection to Carlson Ave intersection	ST	X	X	X	X		Construct Class I multi-use path, intersection ped and bike improvements, new street lighting	ATP	2019/20	$1,360
Humboldt Bay Trail South (Eureka to Bracut segment)	ST	X	X	X	X		Rail with Trail Class I multi-use trail	ATP, SHOPP, Coastal Conservancy	2022/23	$16,400 (CON only)
Myrtle Ave. at Freshwater Road	ST		X	X	X		Intersection improvement	Not funded	TBD	$1,900
Central Avenue, McKinleyville	ST	X	X	X	X		Shoulder widening	Not funded	TBD	$800
Central Avenue, McKinleyville	ST			X	X		Synchronize traffic signals	Not funded	TBD	$1,800
Annie & Mary Trail: Blue Lake to Glendale (Chartin Road to Glendale Drive)	ST	X	X	X	X		Construct Class I multi-use trail	Not funded	TBD	$8,794
Hammond Trail Bridge–Mad River	ST	X	X	X	X	X	Replace existing bridge	Not funded	TBD	$8,000
Hammond Trail: Clam Beach to Scenic Drive	LT	X	X	X	X		Class I, II, and III (0.3 miles). (Interagency coordination with City of Trinidad)	Not funded	2027/28	$2,200
Annie & Mary Trail: Glendale Bridge	LT	X	X	X	X		Rehabilitate or replace railroad bridge to establish Class I trail	Not funded	TBD	$5,000
Little River Trail: Moonstone Beach to Clam Beach	LT	X	X	X	X		Construct Class I multi-use trail	Not funded	TBD	$9,900
Humboldt Bay Trail: Elk River to King Salmon	LT	X	X	X	X		Construct Class I multi-use trail	Not funded	TBD	$2,400
Humboldt Bay Trail: King Salmon to Fields Landing	LT	X	X	X	X		Construct Class I multi-use trail	Not funded	TBD	$1,800
Humboldt Bay Trail: Fields Landing to Humboldt Bay Nat'l Wildlife Refuge/College of the Redwoods	LT	X	X	X	X		Construct Class I multi-use trail	Not funded	TBD	$2,800
Humboldt Hill to Thompkins Hill	LT	X	X	X	X		Connector road	Not funded	TBD	$2,000
Harris to Fern Street, Cutten	LT	X	X	X	X		Connector road	Not funded	TBD	$2,000
Alderpoint/Mattole/Maple Creek	LT			X	X	X	Reconstruct rural routes	Not funded	TBD	$100,000
Bell Springs Road	LT			X	X	X	Improve with Mendocino County	Not funded	TBD	$10,000
Briceland/Shelter Cove Roads	LT			X	X	X	Reconstruction/safety improvements	Not funded	TBD	$10,000
Fern Street, Cutten	LT	X	X	X	X		Complete connection	Not funded	TBD	$1,000
Bald Hills Road	LT			X	X	X	Pave Surface	Not funded	TBD	$6,000
New Navy Base Road, SR 255 to Humboldt Bay	LT	X	X	X	X	X	Reconstruct roadway from SR 255 to Humboldt Bay	Not funded	TBD	$1,500

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
Herrick & Elk River Intersection	LT			X	X		Signalize	Not funded	TBD	$1,500
Fairfield, Meyer, Eureka	LT			X	X	X	Route improvement	Not funded	TBD	$1,000
Ridgewood Drive/Avalon Drive	LT	X	X	X	X		Pedestrian improvements	Not funded	TBD	$1,000
Willow Creek Sidewalks	LT	X	X	X	X		Pedestrian improvements	Not funded	TBD	$1,000
Hatchery Road	LT	X	X	X	X	X	Shoulders	Not funded	TBD	$750
Central Avenue/Bella Vista	LT	X	X	X	X	X	Widen shoulder, striping	Not funded	TBD	$300
Myrtle Avenue, Freshwater Rd to Pigeon Point Rd	LT	X	X	X	X	X	Shoulder widening	Not funded	TBD	$2,000
Myrtle Avenue, Ryan Slough to Freshwater Rd.	LT			X		X	Reconstruction	Not funded	TBD	$5,000
Rohnerville Airport to Hwy 36	LT			X			New road	Not funded	TBD	$5,000
Redwood Drive	LT	X	X	X	X	X	Pedestrian improvements	Not funded	TBD	$2,500
Airport Road at Redwood Coast/Arcata-Eureka Airport	LT	X	X	X	X		Install sidewalk	Not funded	TBD	$380
Scenic Drive	LT			X	X		Road Reconstruction	Not funded	TBD	$15,000
Patrick's Point Drive	LT			X	X		Road Reconstruction	Not funded	TBD	$10,000
							Humboldt County ST Subtotal = $ 57,054 **Humboldt County LT Subtotal = $202,030** **Subtotal = $259,084**	**Constrained = $ 24,360** **Unconstrained = $234,724**		
HOOPA VALLEY TRIBE										
SR 96	ST	X	X	X	X		Downtown traffic calming & safety enhancements	Partially funded	TBD – ST	$4,400
SR 96	ST	X	X	X	X		Reservation-wide safety enhancements; SR2S & pedestrian walk	Not funded	TBD – ST	$12,500
SR96, Trinity River Bridge	ST	X	X	X	X		Safety enhancement; cantilevered walkway	Not funded	2022-25	$12,500
Bair Ranch Road, Humboldt County Road	LT			X		X	Reconstruction of roadway for emergency access	Not funded	TBD	$750
On SR96 at Blue Slide	LT			X		X	New bridge crossing the Trinity River to K'ima:w Medical Center	Not funded	2022-35	$45,000
Tish Tang Road from SR 96 to Medical Center & Hoopa Airport	LT			X		X	Reconstruct Tish-tang (county road)	Not funded	2022-35	$6,500
							Hoopa ST Subtotal = $30,150 **Hoopa LT Subtotal = $51,500** **Subtotal = $81,650**	**Constrained = $0** **Unconstrained= $81,650**		
KARUK TRIBE										
Karuk Tribe/Caltrans: SR 96, Orleans	ST	X	X	X	X	X	Streetscapes/Dip Improvement Project: roadway rehab, ped-bike- transit improvements, landscaping	FHWA TTP Safety funds/ATP (not funded)	2024-25	$1,167

PROJECT AGENCY AND LOCATION	Short/ Long Term	Mode Shift	Lowers VMT	Access	Vision Zero	Fix it first	PROJECT DESCRIPTIONS	Funding Source	Implementation Year(s)	Project Cost ($000)
Karuk Tribe/Caltrans: Tishawniik Hill, Camp Creek Rd to Asip Rd	ST	X	X	X	X		Class I trail (detour project) and Class II bikeway	FHWA TTP Safety funds/ATP (not funded)	2026-27	$1,545
							Karuk Tribe ST Subtotal = $2,712 **Karuk Tribe LT Subtotal = 0** **Subtotal = 2,712**	**Constrained = $0** **Unconstrained = $2,712**		
TRINIDAD RANCHERIA										
US 101-Trinidad Area Access Improvements Project, HUM 101-98.4/100.7 and Cherae Lane	LT	X	X	X			New interchange with local connections to Scenic Drive and Westhaven Drive, with pedestrian access	FHWA TTP funds, STIP, grants (not funded)	2025-2035	$32,500
							Trinidad Rancheria ST Subtotal = $0 **Trinidad Rancheria LT Subtotal = $32,500** **Subtotal = $32,500**	**Constrained = $0** **Unconstrained = $32,500**		

[1] Short-term is 0-10 years; long-term is 11-20 years. Projects with unknown implementation years are listed as long-term.

City, County, & Tribes' Complete Streets Short-Term	*subtotal*	*$242,452*
City, County, & Tribes' Complete Streets Long-Term	*subtotal*	*TBD+ $466,497*
Funded (Constrained) Projects = $ 44,665 **Not funded (unconstrained) projects = TBD + $664,284**		
	TOTAL	**TBD + $708,949**

SYSTEM PERFORMANCE INDICATORS

Transportation performance indicators consist of a set of objectives and measurable criteria used to evaluate the effectiveness of the transportation system. Performance indicators help set goals and outcomes, detect and correct deficiencies, and document accomplishments. Below are performance standards for measuring the "complete streets" system—highway and roadways, bicycle and pedestrian facilities.

Table *Streets-5.* **Performance Indicators for the Regional Complete Streets System**

GOALS	INDICATORS	MEASURES	DATA SOURCES
Safety	Do collision rates exceed statewide averages? Have rates of crashes, fatalities, and injuries decreased? Has the number of miles of "safe routes to school" increased? Has the number of trips to school by bicycling and walking increased?	• Collisions per vehicle (or passenger) miles traveled. • Severity of collisions and injuries. • Number of safety improvement projects implemented. • Miles of safe routes (bike lane miles vs. motor lane miles). • Bicycle crashes per 1,000 cyclists. • Pedestrian collisions per 1,000 pedestrians.	Accident statistics collected by Caltrans District 1 Safety Division, CHP, local agencies, school surveys and bike-ped counts.
Balanced Mode Shares (Complete Streets)	Have transportation projects increased multi-modal options in the region?	• Travel mode split (shares) for work trips. • Travel mode split (shares) for non-work trips.	U.S. Census, American Community Survey.
	Are there more multi-modal connections within and between communities?	• Miles of improved connectivity for bicycle and pedestrian facilities.	Walk/trail/bikeway audits, Bicycle Plan Updates, Public Works Dept. information. Connectivity studies.
	Have walking and bicycle mode shares increased?	• Bicycle ridership (mode share). • Pedestrian travel (mode share).	Surveys, pedestrian and bicycle ridership counts, US ACS..
	Has the level of service (LOS) and level of traffic stress (LTS) improved for alternative modes?	• Pedestrian LOS/QOS, LTS. • Bicycle LOS/QOS, LTS. • Percentage of sidewalks, intersections, and bus shelters that comply with ADA requirements. • (Cross reference with public transit performance indicators)	Local transit operators' data, LOS/QOS results.
Efficient and Viable Transportation System	Are roads better maintained? Do road facilities meet standards for state of good repair? Is rehabilitation backlog decreasing for road maintenance or bridge replacements?	• Pavement Condition Index (PCI) rating. • Maintenance/rehabilitation funding shortfalls.	Public Works Depts, Caltrans District 1, Harbor District, StreetSaver or other pavement management software (PMS).
	Are investments in RTIP projects helping achieve RTP goals?	Per one thousand dollars invested: • Decreased collisions and fatalities. • Decrease in system-operating cost.	Caltrans, Public Works Depts.

GOALS	INDICATORS	MEASURES	DATA SOURCES
	Have investments improved system efficiency and/or productivity?	• Improved access to jobs, school, commerce, and services. • Increase in trips by alternative modes.	
Environmental Stewardship & Climate Protection	Has fuel consumption decreased? Are people driving less (trips or miles)? Are fewer people driving alone to work and school?	• Fuel consumption gallons per capita. • motorized VMT per capita. • motorized VMT per employee. • Average vehicle occupancy rate.	Caltrans annual traffic counts, environmental and compliance reporting.
	Have transportation CO_2 emissions decreased per capita? Have car/light truck VMT decreased?	• Total transportation CO_2 per capita. • Decrease in single vehicle occupancy travel. • Car and truck VMT per CO_2 emissions. • Average utilization rate of park-&-ride lots (% full).	CARB's EMissions FACtors model (EMFAC), environmental and compliance reporting.
Equitable & Sustainable Use of Resources	Has the proportion of transportation investment in environmental justice tracts increased?	• Percentage of RTP/RTIP expenditures in environmental justice tracts/disadvantaged communities. • Average travel time per person trip (EJ/non-EJ). • Percentage of homes within half-mile of transit stop (EJ/non-EJ).	US Census, American Community Survey
	Is transportation planned for new land development (residential, work, commercial, services, recreation)?	• Ratio of jobs to housing. • Average distance to nearest transit stop and park-and-ride lot. • Percentage of jobs and population within 0.4 miles of transit.	General Plan updates.
Economic Vitality	Have transportation investments contributed to economic growth? Has access to jobs, markets, and/or services increased?	• Direct and indirect economic benefits from increased multi-modal options? • New residential/commercial development within ¼ to ½ mile of public transit.	

8. COMMUTER TRAILS ELEMENT



Trails are made in a variety of shapes, textures, and places. There are numerous types of trails which accommodate a variety of uses, as depicted by terms such as hiking trail, equestrian trail, mountain bike trail, multi-use trail, cross-country ski trail, and rail-trail. The Trails Element describes Humboldt's existing, planned, and desired regional trails network in the context of a regional transportation system. The Regional Transportation Plan Commuter Trails Element will focus on trails used for transportation, meaning trails used to travel from one destination to another. Regional trails that link destinations within and between communities are particularly important. Recreational trails not used for transportation are not discussed here, but are included in other HCAOG adopted plans.[1] Note that the "Complete Streets Element" covers sidewalks, bike lanes (Class II), and bike routes (Class III).

Other plans and studies have detailed information on local trails and regional trail networks. We rely on those plans for details on the histories, existing conditions, and proposed designs of the region's trails. The Commuter Trails Element's policies are derived, in part, from the goals, objectives, and policies adopted in the Humboldt Regional Bicycle Plan (2018), Humboldt County Regional Trails Master Plan (2010), and Humboldt County Regional Pedestrian Plan (2008).

Other important planning documents to refer to for existing conditions, supporting policies, priority projects, and implementation actions include:

- Humboldt Bay Trail South Project Description Report (County of Humboldt, September 2020)
- "State of the Trails" Report: Expanding Regional and Local Trails (Humboldt County, June 2016)
- Humboldt County Coastal Trail Implementation Strategy (Cal. Coastal Conservancy, 2011)
- Humboldt Bay Trail Feasibility Study: Eureka to Arcata (HCAOG, 2007)
- *Humboldt Bay Trail Feasibility Study* (California Coastal Conservancy, 2001)

As a major element in California's outdoor recreation industry, trails help generate $85 billion in consumer spending and $27 billion in wages and salaries every year.

— California State Bike & Ped Plan, 2017

[1] For information on recreational trails in Humboldt County, see the referenced plans, particularly the *Humboldt County Regional Trails Master Plan* (HCAOG, 2010).

EXISTING REGIONAL TRAILS

This section describes existing and planned regional, multi-use trails in Humboldt County. For the transportation system, regionally significant trails are those that serve as travel corridors, connecting communities and major destinations in the region (as opposed to being solely recreational trails). Proposed trails projects, including extensions to existing trails, are described in the next section, Action Plan.

CALIFORNIA COASTAL TRAIL

The California Coastal Trail (CCT) is a partially completed trail from the Mexican border to the Oregon border following Highway 1 and the California Coast. Approximately 70%_complete, the CCT is currently comprised of discontinuous segments along the coastline. When completed, the CCT will extend the length of California's 1,230 mile coastline along beaches, bluffs, seaside roads, and through coastal towns and communities. While primarily for pedestrians, the CCT accommodates various user groups, such as bicyclists, wheelchair users, equestrians, and others as opportunities allow.

> The CCT is envisioned as a continuous public right-of-way along the California coastline; a trail designed to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation.
> *– Coastal Conservancy*

Humboldt is California's longest coastal county, and it has the longest portion of the CCT. There are 154 miles of CCT in Humboldt County; the Coastal Conservancy deems 92 miles to be "adequate" (the most of any county). These trail miles are a mixture of separated multi-use paths (such as the Hammond Trail), rural roads, designated bike lanes, bike routes, and shoulders on State Route 101. Many miles still need to be improved–or even rerouted, such as trail segments on the highway, or where the trail detours inland from the coast to avoid private lands.

The *Humboldt County Coastal Trail Implementation Strategy* (California Coastal Conservancy, 2011) outlines a proposed CCT route along Humboldt's coastline. The Strategy was developed locally, which included talking with stakeholders from residents to agency staff. The Strategy recommends actions to complete the CCT in Humboldt County. (The Coastal Trail symbol identifies trails that are and/or would be a designated part of the California Coastal Trail.)

PACIFIC COAST BIKE ROUTE

The Pacific Coast Bike Route (PCBR) runs the length of California, from the California/Oregon State line to the California/Mexico border. The northern tip begins on Highway 101 in Del Norte, takes local roads around

Crescent City, and enters Humboldt County via the Newton B. Drury Scenic Parkway in Redwood National & Prairie Creek Redwoods State Park. Within Humboldt, the PCBR travels local roads in McKinleyville, Arcata, and Eureka. Several of these roads are also part of the California Coastal Trail.

HAMMOND TRAIL



The Hammond Trail links the south bank of the Mad River with Clam Beach County Park and travels through coastal McKinleyville to the Hammond Bridge. The trail is approximately 5.5 miles long of Class I multi-use trail, paved, and separated from motorized traffic. The Hammond Trail is part of the Pacific Coast Bike Route, and was designated a part of the California Coastal Trail in June 2010.

EUREKA WATERFRONT TRAIL & PROMENADE

The Eureka Waterfront Trail runs along the city's bayfront, from Tydd Street (near the Eureka Slough) to Herrick Avenue at the Pound Road Park-and-Ride. The trail is comprised of several segments. A Class I paved trail from Tydd Street to the Samoa Bridge Boat Ramp then turns into a multi-use path from Halvorsen Park past the Adorni Center and to the Old Town Boardwalk. The City of Eureka completed the G to I Street road and sidewalk connection in 2018. From C Street south to Elk River the trail is a separated Class I trail that includes the popular 1.5-mile Hikshari' Trail. Hikshari' is the Wiyot place name for this coastal area west of Broadway Street where the Elk River flows into Humboldt Bay. Segments of the Waterfront Trail are part of the Pacific Coast Bicycle Route.


City of Eureka - Eureka Waterfront Trail

HUMBOLDT BAY TRAIL

What is now collectively referred to as the Humboldt Bay Trail has been the region's top trail priority for over a decade. The grand vision is to have a multi-use trail for non-motorized travel from Trinidad and Blue Lake to College of the Redwoods. This is a multi-jurisdictional trail within Humboldt County. The following briefly summarizes current progress on the trails.

- Caltrans: Caltrans will be implementing a large-scale wetland mitigation project and has taken responsibility for incorporating, within that project, most—and possibly all—of the wetland mitigations required for the Bay Trail North segment.
- City of Arcata—*Bay Trail North (Samoa Blvd to Bracut Industrial Park)*: The City of Arcata constructed this portion in the summer/fall of 2017, and the trail opened in October.


City of Arcata - Bay Trail North

- County of Humboldt—*Bay Trail South (Bracut Industrial Park to Eureka City limits):* The County is the lead agency for developing this four-mile segment. The County released a project description report and 60% design plans in September 2020. This section is designed as "Rail-with-Trail" such that the rail prism will be preserved for use by rail, allowing for tourist excursions around Humboldt Bay should the tracks ever be repaired.
- The County is finalizing land acquisition negotiations and seeking permits from regulatory agencies. The timeline currently calls for construction to begin in 2022/2023. .
- City of Eureka—*Eureka Waterfront Trail*: The City of Eureka constructed from Hikshari' Trail at Truesdale Street (north to Del Norte Street) in 2016, and in 2017 constructed from Del Norte Street north to C Street, and the 600' boardwalk near Eureka slough).

ANNIE AND MARY RAIL TRAIL


Source: League of CA Cities
Blue Lake: Annie & Mary Trail

The Annie & Mary Trail is a multi-jurisdictional regional trail network that will connect the cities of Arcata and Blue Lake. The trail would generally follow the Mad River and former Arcata & Mad River Railroad Company corridor, with alternate alignments as needed based on geographic constraints. The City of Blue Lake, in November 2020, completed Phase 1 of the project, a one-mile paved Class I trail. Phase 2 proposes a Class 1 trail from Chartin Road in Blue Lake to the community of Glendale. The City of Arcata, thanks to an ATP grant, will continue their trail network by continuing the existing trail at the Skate Park/ Sunset Avenue/Larson Park area to West End Road, Aldergrove Industrial Park, and continuing further east to the Humboldt Bay Municipal Water District Park 1. The end of that trail will someday link to the Annie & Mary Trail to Blue Lake.

Existing Class I regional multi-use trails are mapped on Figure 7.1 (see Maps Tab).

GOALS, OBJECTIVES, & POLICIES

GOALS: Humboldt's regional trail network is a complete and seamlessly connected system that gives people options for safe, active transportation within and between communities.
The California Coastal Trail within Humboldt County is a continuous public right-of-way along the coastline and a contiguous trail for non-motorized travel. The CCT fosters appreciation and stewardship of the scenic and natural resources of the North Coast.

OBJECTIVES: To strive for this goal, the policies listed in the Commuter Trail Element will help meet the RTP's main objectives (listed in alphabetical order).

The tree symbol indicates Safe & Sustainable Transportation objectives. (See Chapter 2, Renewing Our Communities for definitions of the main objectives and for the full table of SST objectives and targets.)

MAIN OBJECTIVES:	COMMUTER TRAILS POLICIES
AT Mode Share/ Complete Streets	**POLICY TRAILS-1 Pursue funding for planned trails:** HCAOG shall pursue active transportation system funding to implement priority trail projects identified in the Commuter Trails Element and the *Humboldt County Regional Trails Master Plan*.
Efficient & Viable Transportation System	**POLICY TRAILS-2 Trails in public right of way:** HCAOG shall pursue and support using existing public right-of-way for trails to the maximum extent feasible in order to preserve land, assets, and financial resources.
Environmental Stewardship & Climate Protection	**POLICY TRAILS-3 Minimize impacts to natural resources:** HCAOG shall support entities to design and locate regional trails to minimize impacts to environmentally sensitive habitat areas and prime agricultural lands to the maximum extent feasible. **POLICY TRAILS-4 Coastal access:** HCAOG encourages municipalities to update Local Coastal Programs (LCPs) to fully address coastal access policies and ensure getting applicable routes designated as the California Coastal Trail. **POLICY TRAILS-5 Plan for sea level rise:** HCAOG supports collaborative, multi-jurisdictional projects that consider adaptation to sea-level rise in trail planning and development.
Equitable & Sustainable Use of Resources	**POLICY TRAILS-6 CA Coastal Trail principles:** HCAOG supports and encourages the design principles, as applicable, that the Coastal Conservancy outlines in "Completing the California Coastal Trail" (2003), which are: proximity to the sea, connectivity, integrity, respect, and feasibility. **POLICY TRAILS-7 Equitable travel access:** The regional trails network shall provide travel options for residents and visitors, with equitable access for transportation-disadvantaged populations.
Safety & Health	**POLICY TRAILS-8 Prioritize trail safety:** HCAOG will prioritize planning, design, construction, adequate maintenance, education, enforcement, and other actions to improve safety, and the perception of safety, for the intended uses of the regional trails system.

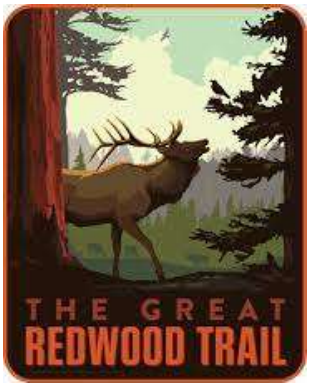
NEEDS ASSESSMENT

The *Regional Trails Master Plan* (HCAOG 2010) documents regional trails system needs, which were assessed through reviewing state and local adopted plans (literature review), getting community input for a trail vision, and analyzing constraints, trail development strategies, and trail priorities. The *Regional Trails Master Plan* was funded in response to a growing and intensified interest on the part of Humboldt County residents for enhanced development of a non-motorized ("active") transportation facility network. A regional active transportation system is of particular interest in this region because there are limited options for active travel between north coast communities, other than small, narrow two-lane county roads and/or highway shoulders.

Significant progress has been made on the Humboldt Bay Trail between Eureka and Arcata, a reach that has been a regional trail priority for more than a decade. The last 4.25 miles of the Bay Trail South are funded for construction. A separated multi-use trail south of Eureka is needed to extend the Waterfront Trail south to the College of the Redwoods, connecting the communities of Humboldt Hill, King Salmon, Fields Landing. The

Little River bridge crossing is an identified connectivity gap, where a separated bicycle facility is needed to connect the northern end of the Hammond Trail to the communities of Westhaven and Trinidad.

GREAT REDWOOD TRAIL



In September 2018, Governor Brown signed Senate Bill SB 1029, known as the North Coast Railroad Authority Closure and Transition to Trails Act, to dissolve the North Coast Railroad Authority (NCRA) and transfer the rights-of-way and other properties to a successor agency that would create a Great Redwood Trail for hiking, biking and riding. The bill directed the California Transportation Agency, Caltrans, Department of Finance and Department of General Services to assess NCRA's debts and assets, and the viability of constructing a trail on the NCRA corridor. Governor Newsom signed SB 69 in September 2021, formalizing the wind-down of the NCRA and the transition to the Great Redwood Trail Agency. Overseen by the California Coastal Conservancy, the Agency is tasked with planning and constructing the trail, which is envisioned to be a 300-mile rail-trail running from the edge of the San Francisco Bay Area in Marin County, through the Eel River Canyon, and terminating in Blue Lake and Samoa. Existing Class I trails such as the Humboldt Bay Trail are part of this larger proposed interregional system. The Carlotta Branch line of the NCRA right-of-way would connect the communities of Hydesville and Carlotta, while other sections would connect Rio Dell, Fortuna, and Loleta. Plans to extend the Humboldt Bay Trail south to the College of the Redwoods would benefit from rail-banking and the ability to build rail-to-trail.

In late 2020, the NCRA Board approved two proposals for converting the parts of the rail right-of-way in Humboldt for trail use. The NCRA Board approved the City of Eureka's project proposal for their trail south of Eureka, permitting the City to remove some railroad track. In December, they approved a lease agreement with the County of Humboldt for the Humboldt Bay Trail South project, which also includes removing track in a portion of the trail.

Regional trail needs are also assessed when HCAOG updates the *Regional Bike Plan* (currently every five years) as well as annually when HCAOG performs a progress report of plan implementation. HCAOG convenes and facilitates an ad-hoc Bicycle Advisory Committee for each progress report.

ACTION PLAN: PROPOSED PROJECTS

HCAOG's Action Plan is to carry out the policies of the Commuter Trails Element and ultimately implement the projects identified in Table *Trails-1*. Projects come from the HCAOG plans incorporated here by reference. Projects were identified and prioritized by agency staff, public and private stakeholders, and community members at-large as part of agency coordination, public outreach, and public review. The Action Plan projects are proposed multi-use trails that scored high in the *Regional Trails Master Plan* (RTMP) and/or are top priorities in one or more adopted HCAOG plans.

Table *Trails-1*. **Regional Commuter Trail Projects**

Trail Project	Jurisdiction	Description	In other HCAOG plan(s)[1]
Annie and Mary Rail Trail	Arcata, Blue Lake, Blue Lake Rancheria, Humboldt County	6.8-mile trail corridor that would run east from the Aldergrove Industrial Park in Arcata to the City of Blue Lake, following the inactive NCRA railroad corridor and a segment along SR 299.	HCCTIS, RPP, RTMP
Arcata Rails with Trail	Arcata, Humboldt County	Trail from West End Road to Samoa Boulevard, with segments along railroad tracks. This trail would link the Annie & Mary Trail and the Humboldt Bay Trail.	HCCTIS, RBP, RPP
Baylands Trail	Arcata	Within Baylands Park – Class I	RTMP
Bay-to-Zoo Trail	Eureka	Paved 2-mile trail that will provide connection between Waterfront Trail and Sequoia Park and Zoo.	
California Coastal Trail	HCAOG	*Table continues on next page* • Encourage Caltrans to design improvements for pedestrians and bicycles on the bridges crossing the Eel River and Mattole River. • Work towards implementing the *Humboldt County Coastal Trail Implementation Strategy*, in coordination and cooperation with local jurisdictions, agencies, and other public and private stakeholders to design, locate, fund, acquire, and maintain segments of the California Coastal Trail. • Work with private landowners to acquire public access rights at locations from Centerville Beach to Cape Mendocino.	HCCTIS, RPP
Eureka Loop Trail*	Eureka	Multipurpose trail connecting the north and south ends of the Eureka Waterfront Trail to key destinations in the south, east and west of Eureka and portions of the Greater Eureka Area.	
Hammond Trail	Arcata, Humboldt County	Extend the Hammond Trail from the Mad River bridge south, connecting to the City of Arcata (downtown) and Eureka. Extend the trail north to Westhaven and Trinidad. Replace the Hammond Trail pedestrian/bicycle bridge across the Mad River.	HCCTIS, RBP, RPP, RTMP
Hoopa Valley Trail	Humboldt County	A 6-mile segment along SR 96 from the south end of Shoemaker Road northward (in Caltrans right-of-way). The long-term vision is to expand the trail throughout the Hoopa Valley.	RPP
Humboldt Bay Trail South*	Arcata, Humboldt County	Bracut to Eureka Segment: 4.25 miles of a Class I/multi-use path around the east side of Humboldt Bay to complete the link between Arcata and Eureka. The trail would follow the North Coast Railroad rail corridor and parallel U.S. 101.	HCCTIS, Humboldt Bay Trail Feasibility Study, RBP, RPP, RTMP
Humboldt Bay Trail (Eureka to College of the Redwoods)*	Eureka, Humboldt County	This would continue the Class I/multi-use path from Humboldt Bay Trail south in three conceptual segments: Elk River to King Salmon; King Salmon to Fields Landing; and Fields Landing to the Humboldt Bay National Wildlife Refuge and College of the Redwoods.	
John Campbell Memorial Greenway*	Fortuna	Multi-purpose from the Riverwalk Trail to the south entrance of the Headwaters Reserve	RBP, RTMP
Little River Trail (Hammond Trail Extension)*	Humboldt County	Multi-use (Class I) trail between Clam Beach and Moonstone Beach. The trail would connect the Hammond Trail and Clam Beach Road to Scenic Drive.	RBP

Trail Project	Jurisdiction	Description	In other HCAOG plan(s)[1]
Manila Shared Use Path*	Humboldt County	Class I multi-use trail adjacent to Highway 255, from the intersection of Dean Street and Pacific Avenue, to Carlson Avenue intersection.	RBP
Orick Levee Coastal Trail	Humboldt County	Multi-purpose trail on north Redwood Creek levee to the U.S. 101 bridge (0.69 miles), south levee to Redwood National Park Visitor Center (2.45 miles).	HCCTIS (Priority Project)
Riverwalk Trail	Humboldt County	Fortuna City limits to Sandy Prairie	RTMP

The symbol identifies trails that are or would be part of the California Coastal Trail.
[1]HCCTIS=Humboldt County Coastal Trail Implementation Strategy (2011); RBP=Regional Bicycle Plan (2017); RPP=Regional Pedestrian Plan (2008); RTMP=Regional Trails Master Plan 2010).
*See the Complete Streets Element, Table *Streets*-4 for estimated project costs.

REFERENCES

CITATIONS

California Coastal Conservancy 2011 *Humboldt County Coastal Trail Implementation Strategy*. Prepared for State of California Coastal Conservancy by Redwood Community Action Agency Natural Resources Services Division, Alta Planning + Design, Planwest Partners, and Streamline Planning Consultants. (January 2011)

HCAOG 2007 *Humboldt Bay Trail Feasibility Study: Eureka to Arcata*. Prepared for HCAOG by Alta Planning + Design and Redwood Community Action Agency.

HCAOG 2008 *Humboldt County Regional Pedestrian Plan*. Prepared for HCAOG by Alta Planning + Design, Redwood Community Action Agency, SHN Consulting Engineers. (June 2008)

HCAOG 2010 *Humboldt County Regional Trails Master Plan*. Prepared for HCAOG by Planwest Partners, Redwood Community Action Agency Natural Resources Services Division, Alta Planning + Design.

RESOURCES

Annie & Mary Rail Trail Feasibility Study. Prepared for the California Coastal Commission by Redwood Community Action Agency. (2003)

Annie & Mary Trail: Next Steps. Prepared for HCAOG by Alta Planning + Design. (June 2008)

Completing the California Coastal Trail. California Coastal Conservancy. (January 2003)

Coasting: Wandering the California Coastal Trail in Humboldt. Rees Hughes, North Coast Journal. (February 21, 2013)

Little River Feasibility Study. Prepared for the State Coastal Conservancy by Redwood Community Action Agency. (April 2014)

Manila Community Transportation Plan: Phase II Final Report. Prepared for the County of Humboldt by Whitlock & Weinberger Transportation, Inc. (December 28, 2005)

"State of the Trails" Report: Expanding Regional and Local Trails in Humboldt County. County of Humboldt. (June 2016)

Humboldt Bay Trail South Project Description Report. County of Humboldt. (September 2020)

9. PUBLIC TRANSPORTATION ELEMENT

Public transit in Humboldt County is primarily bus and van. There is no passenger rail or subway. The region provides public transportation via transit buses and paratransit (complementary as required by law, as well as supplemental). Local public transit is augmented by social service organizations and non-profits that offer transportation services to eligible populations.



EXISTING INTERREGIONAL TRANSIT SYSTEM

Interregional transit services move people into and out of Humboldt County. Two national services serve Humboldt County: Greyhound Bus Lines and Amtrak Thruway Motorcoach. Greyhound runs between the Arcata Transit Center and the San Francisco Bay Area, with stops in Eureka, Rio Dell, and Garberville. The Amtrak Thruway bus route runs from McKinleyville to the Martinez Train Station, where passengers board connecting trains (e.g., trains to Emeryville connect to a shuttle bus that stops in San Francisco). With the passage of Senate Bill 742[1], Amtrak Thruway busses can transport passengers who are not connecting to a passenger rail service. Greyhound and Amtrak buses run seven days a week. Interregional services should be coordinated to the extent possible with regional transit systems to allow for convenient connections.

Redwood Coast Transit (RCT) is Del Norte County's public transit system. RCT provides bus service between Arcata and Smith River, Del Norte County, weekdays and Saturdays. The RCT bus runs along the U.S. 101 corridor. Scheduled bus stops in Humboldt County include Redwood National Park, Klamath, Orick Post Office, Trinidad Park and Ride, and the Arcata Transit Center.

Humboldt Transit Authority's Willow Creek Transit System can connect passengers from Arcata and Willow Creek to Trinity Transit of Trinity County for destinations further inland. Trinity Transit will take passengers east to Weaverville, and further east to Redding in Shasta County.

EXISTING REGIONAL TRANSIT SYSTEM

Within Humboldt, various transit routes connect to one or another transit systems at major transfer points. These transit "hubs" include downtown Eureka (4th & H Street), the Bayshore Mall in Eureka, and the

[1] SB 742, Allen. Intercity passenger rail services: motor carrier transportation of passengers (2019).



Intermodal Transit Center in Arcata (commonly referred to as the Arcata Transit Center). In Eureka, bus stops at the Bayshore Mall, as well as the area of 3rd/4th/5th and H Street, provide connections between Redwood Transit System (RTS), Southern Humboldt Intercity (SHI), and Eureka Transit System (ETS) buses. The Arcata Transit Center is a central transfer facility where, in addition to inter-regional buses, many local bus systems stop, including RTS, Willow Creek Transit System, Arcata & Mad River Transit System (A&MRTS), Blue Lake Rancheria Transit System (BLRTS), and RCT of Del Norte County. Humboldt County's public transit and paratransit service areas are mapped on Figures: 9.1a, 9.1b, 9.1c, and 9.1d (see Maps Tab).

The RTS commuter bus makes multiple stops in and near Fortuna, allowing potential connections between Fortuna Transit and RTS. The Willow Creek Transit System provides connections to the Hoopa Reservation and Orleans.

PUBLIC TRANSIT SERVICES

Details on regional transit operators (e.g., transit organizations, services areas, fleets, fares, passenger volumes, etc.) can be found in the following HCAOG plans, which are incorporated by reference:

- Report of Findings for Unmet Transit Needs (HCAOG prepares this report annually);
- Humboldt County Transit Development Plan 2017-2022 (HCAOG, 2017) (or most current);
- Mobility-on-Demand Strategic Development Plan (HCAOG, 2020);
- Humboldt County Coordinated Public Transit–Human Services Transportation Plan (HCAOG, 2021);
- McKinleyville Transit Study (HCAOG, 2021).

Humboldt Transit Authority (HTA)

The Humboldt Transit Authority (HTA) is a joint powers authority (JPA), established in 1975 by a joint powers agreement signed by Humboldt County and the cities of Arcata, Eureka, Fortuna, Rio Dell and Trinidad. HTA is funded primarily through fares and Transportation Development Act (TDA) funds from the JPA members. Table *Transit*-1 below shows what percentage the HTA members pay HTA for their respective transit service(s).

Table *Transit*-1. **Humboldt Transit Authority (HTA) Shared-Cost Assessments***

HTA Member	Redwood Transit System	So. Hum Intercity	Willow Creek Intercity	Eureka Transit Service	Samoa Transit System	Arcata DAR/DAL
County of Humboldt	50.00%	100%	100%	27%	100%	60%
City of Eureka	22.61%					
City of Arcata	14.35%					40%
City of Fortuna	9.93%					
City of Rio Dell	2.80%					
City of Trinidad	0.31%					
Total	100.00%	100%	100%	100%		100%

HTA operates and maintains the Redwood Transit System (RTS), Eureka Transit Service (ETS), Willow Creek Transit Service and Southern Humboldt Intercity, and Southern Humboldt Local. The HTA serves as the Consolidated Transportation Service Agency (CTSA) for Humboldt County and in that capacity coordinates paratransit services. Also, under contract, HTA provides paratransit (Dial-A-Ride and Dial-A-Lift) administrative services for the region. Currently, HTA owns one all-electric bus and plans to purchase additional Zero Emission Busses (see Table Transit-2).

Redwood Transit System (RTS)

HTA operates Redwood Transit System (RTS), which is the primary intercity public transit system in the county. The RTS line is a fixed-route commuter service, along the U.S. 101 corridor, between the cities of Scotia and Trinidad. Key trip origins and destinations include HSU, College of the Redwoods, the Arcata Transit Center, Downtown Eureka and the Bayshore Mall. RTS runs Monday through Sunday seven days a week. RTS sees the highest number of riders as it serves the highest densely populated Humboldt Bay area stretching from McKinleyville to Fortuna. The largest share of riders is students. Ridership has been on a downward trend and is yet to return to pre-pandemic levels.

Southern Humboldt Intercity

HTA operates the Southern Humboldt Intercity, which provides a fixed route service six days a week during peak travel times in the morning and afternoon, connecting the communities of Garberville and Eureka with stops in Benbow, Redway, Phillipsville, Miranda, Myers Flat, Weott, Fortuna, and College of the Redwoods.

Willow Creek Transit System

HTA operates fixed-route service along State Route 299 between Willow Creek and the Arcata Transit Center. The Willow Creek bus runs weekdays and Saturdays.

Eureka Transit Service (ETS)

The Eureka Transit Service (ETS) has been operating since January 1976. The City of Eureka contracts HTA to operate ETS. ETS operates four fixed-route lines on weekdays and three fixed-route line on Saturdays. Currently the buses run loop routes with service primarily within the City of Eureka, and also some adjacent areas of the unincorporated County. The City of Eureka is studying the feasibility of changing ETS buses to line routes

Arcata & Mad River Transit System (A&MRTS)

The Arcata City Council initiated A&MRTS in 1975, and operates it through the Building & Engineering Department. A&MRTS provides fixed-route transit service within the Arcata city limits; service two routes run weekdays and one (combined) route runs Saturdays. Its hub is the Intermodal Transit Center, a.k.a. the Arcata

Transit Center). A&MRTS contracts HTA to maintain its fleet vehicles. A&MRTS operates one all-electric bus with plans to purchase additional ZEBs.



Blue Lake Rancheria Transit System (BLRTS)

The Blue Lake Rancheria Transit System (BLRTS) began operating in 2002, and is operated by the Blue Lake Rancheria, a federally recognized tribe in Humboldt County. The service is offered in partnership with the City of Blue Lake, which provides partial funding through its TDA fund allocation. Funding sources for operations are also provided through grant funding awarded via the Tribal Transportation Program administered by FTA, and other tribal funds.

The BLRTS operates a deviated fixed-route service, on weekdays, between Blue Lake/Glendale and the Arcata Transit Center. The BLRTS offers call stops at the Mad River Community Hospital, United Indian Health Services, and Erickson Court, Arcata. Passengers must call ahead for service. The BLRTS uses on-site generated biodiesel fuel and has one electric bus in its fleet, with plans to purchase more electric vehicles.

Yurok Tribal Transit Service (YTTS)

The Yurok Tribe Transportation Department, under direction from the Yurok Tribal Council, operates YTTS, which is a demand-responsive public transportation service. The YTTS operates weekdays, providing service in and around Klamath, Crescent City, Weitchpec, Wautec, and Tulley Creek areas. The Yurok Tribes offers this as a Dial-a-Ride service, scheduling trips based upon community needs (i.e., requests for pick-up). The YTTS will provide service for work-commute trips from Klamath to Crescent City in Del Norte County. They offer this service dependent upon scheduling availability, weekdays between 8:30 a.m. and 5 p.m., and with a minimum of 3 passengers. The Yurok Tribe is scheduled to begin service in 2022 in the Orleans-Hoopa-Willow Creek area to fill the gap in service left when the Klamath-Trinity Non-Emergency Transit (KT-NeT) discontinued service as a result of the COVID-19 pandemic.

Additionally, the YTTS has implemented a seasonal River Ferry providing transportation between Wautec and Klamath. Tribal Transportation grants and FTA grants fund ferry service.

PUBLIC PARATRANSIT SERVICES

The Americans with Disabilities Act (ADA) defines a disabled person's right to equal participation in transit programs. If public bus service is provided, it must comply with ADA requirements to provide "complementary" paratransit. Paratransit is origin-to-destination transportation for people with disabilities who cannot use the bus all or some of the time. Paratransit must serve destinations within a ¾-mile of all public fixed-route bus service (49 CFR 37.131). Some public transit providers (and towns, cities, and counties) provide a non-ADA paratransit-like service, sometimes called dial- a-ride or dial-a-lift (DAR/DAL) service. Typically, this service is provided to both senior citizens and people with disabilities.

Paratransit services in Humboldt County are operated by the HTA, BLRTS, City Ambulance of Eureka, and the City of Fortuna. Paratransit providers are described briefly below.

City Ambulance of Eureka (CAE)

City Ambulance of Eureka provides emergency and non-emergency medical transportation, taxi cab, shuttle, and DAR/DAL services. Within HCAOG's region, City Ambulance provides service for areas in the City of Arcata, City of Eureka, and areas in the unincorporated County of Humboldt.

> "A missed medical trip can affect a person's quality of life and can result in a need for more costly care. Compared with the cost of health care, the cost of providing transportation for access to health care can be small."
>
> *– J. Hough & J. Mattson*

Fortuna Transit

The City of Fortuna operates Fortuna Transit (formerly called Fortuna Senior Bus), which is demand-responsive, curb-to-curb, weekday transport service for seniors aged 50 and older or disabled persons who are unable to drive. The Fortuna Transit service area is within Fortuna city limits; however, in 2018 Fortuna Transit implemented a weekly service to medical appointments in Eureka. The City's Parks and Recreation Department administers and operates Fortuna Transit.

OTHER TRANSPORTATION PROVIDERS

Community and social service organizations throughout Humboldt County also provide transportation services aside from public transit and paratransit. Most provide DAR, DAL, and/or non-emergency medical transportation services. Refer to the *Humboldt County Coordinated Public Transit–Human Services Transportation Plan* (HCAOG, 2021) "Report of Findings for FY 2017-18 Unmet Transit Needs" (HCAOG 2017, or most current t) for brief summaries of these organizations' transportation services:*

- Adult Day Health Care of Mad River
- Area 1 Agency on Aging (A1AA)
- County of Humboldt Health and Human Services
- Ferndale Senior Resource Center "Bridging the Gap"
- Humboldt Medi-Trans
- Humboldt Senior Resource–Adult Day Care Center
- K'ima:w Transportation Department of the K'ima:w Medical Center, Hoopa Valley
- Redwood Coast Regional Center
- Southern Trinity Health Services

*Services/service providers are also described in: Humboldt County Transit Development Plan 2017-2022 (HCAOG 2017a), and Humboldt County Coordinated Public Transit–Human Services Transportation Plan (HCAOG, 2021).

GOAL, OBJECTIVES, & POLICIES

The public transit objectives and policies are developed to achieve broad transit goals, align with Safe and Sustainable Transportation targets, and meet the transit needs identified in this element. These goals and objectives are both short- and long-range, and are the foundation of the transit projects identified in the Action Plan below. The goals, policies and objectives are consistent with the Financial Element, specifically identifying project and program areas that should be included in the Regional Transportation Plan in order to leverage funding, as a result of shifting funding priorities at the federal level. In order to meet regional and state greenhouse gas reduction targets (see Active Transportation Introduction), there needs to be a mode shift toward shared-use transit and away from single occupancy vehicle trips, for trips both within and out of the County.

GOAL: Achieve an integrated and sustainable multimodal transportation system that provides public transportation options for all users traveling in Humboldt County. Transit and paratransit users have options for affordable, reliable and efficient transit service that effectively meets their local and regional mobility needs.

OBJECTIVES: To strive for this goal, the policies listed in the Public Transportation Element will help meet the RTP's main objectives (listed in alphabetical order):

MAIN OBJECTIVE:	PUBLIC TRANSPORTATION SUB-OBJECTIVES (♦) & POLICIES
Active Transportation Mode Share/ Complete Streets	♦ Expand and improve local and interregional transit services to improve mobility for people in Humboldt County ♦ Increase percentage of all trips, combined, made by walking, biking, micro-mobility/matched rides, and transit. ♦ Reduce VMT per capita **POLICY TRANSIT-1** To grow and meet transit demand, fund programs and support services that make public transportation a fast and convenient way for people to get to their destinations. Support funding expanded routes, increased trip frequency, faster travel times (express routes), and first-last mile services including on-demand service. Prioritize programs with the highest potential to increase ridership and reduce the number of single-occupancy-vehicle trips made in Humboldt County. **POLICY TRANSIT-2** HCAOG shall support transit providers in Humboldt County in coordinating public transit services for local, intercity, tribal area, and interregional travel, including planning with regional and local providers in neighboring counties and encouraging Amtrak to implement new bus-only thruway routes in the region. **POLICY TRANSIT -3** HCAOG supports having an integrated transit network that enables users to conveniently connect transit trips with biking and walking (first-last mile connectivity), such as by accommodating bicycles on transit vehicles, providing secure bicycle parking at transit stops, integrating mobility-on-demand services with transit service (e.g., bikeshare, scootershare, carshare, carpooling), and maximizing walkability and ADA accessibility to bus stops.

Economic Vitality	◆ Transit service provides convenient means of transportation to work, medical appointments, and shopping.
Efficient & Viable Transportation System	◆ Maximize operating efficiency and productivity without lowering service quality. ◆ Ensure that transit systems meet minimum performance standards. ◆ Reduce on-road transportation-related fossil fuel consumption in Humboldt County. 
	POLICY TRANSIT-4. Local funding for expansion: HCAOG will help develop local funding sources to afford expanding service to meet demand. **POLICY TRANSIT-5. Federal and state transit funds:** HCAOG shall advocate for and support initiatives to increase federal and state transportation funds allocated for public transit services. **POLICY TRANSIT-6. Integrate mobility-on-demand:** HCAOG supports strategically integrating mobility-on-demand and "micro-transit" services as public transportation services either operated or contracted by public agencies, in order to maximize coordinated service and minimize vehicle miles travelled. **POLICY TRANSIT-7. Advanced technology:** HCAOG shall assist transit service operators in adopting advanced technology solutions to improve real-time travel information and simplify fare payment systems (California Integrated Travel Project 2020). **POLICY TRANSIT-8. System performance:** HCAOG shall facilitate monitoring and evaluating transit services, and maintain a current transit development plan. HCAOG will follow and promote recommendations to improve system performance whenever feasible.
Environmental Stewardship & Climate Protection	◆ Coordinate long-range transit planning with land use policy, environmental policy, and development projects to help achieve a balanced transportation system. ◆ Double transit trips by 2025, and again by 2030, and again by 2040. 
	POLICY TRANSIT-9. Zero-emission fleets: HCAOG supports transitioning transit fleets to alternative fuels that will meet zero-emission bus (ZEB) standards. HCAOG will assist agencies in planning for ZEB rollout and in identifying funding for capital improvements necessary to support infrastructure for alternative fuels.
Equitable & Sustainable Use of Resources	◆ Make transit service as affordable and convenient as possible for Humboldt's primary transit users, who are low-income households, youth, seniors, students, and persons with disabilities.
	POLICY TRANSIT-10. Integrated social services and transit: HCAOG shall help promote integrated social services and public transportation services, including specialized transportation programs for the county's disabled and elderly population. **POLICY TRANSIT-11. Paratransit service:** HCAOG shall support paratransit providers to maintain a zero trip-denial rate (defined by ADA) for ADA-eligible registrants and ensure that ADA complementary paratransit is capable of serving all confirmed ADA-eligible trips within the ADA service area.

Safety & Health	◆ Decrease roadway fatalities by increasing the number of trips taken by transit
	POLICY TRANSIT-12. Safety and health benefits from transit: HCAOG will promote the safety benefits and positive public health outcomes associated with high quality public transportation, such as reduced traffic crashes and pollution emissions, and increased physical fitness and improved mental health.

NEEDS ASSESSMENT

Humboldt's public transit needs are assessed on a regular basis. HCAOG's Social Services Technical Advisory Council (SSTAC) and Technical Advisory Committee (TAC) review transit needs throughout the year. Local transit providers are members of these committees. HCAOG consulted with the committees for them to update, review, and disseminate drafts of the Public Transportation Element, and other chapters of the RTP.

Annually, HCAOG assesses transit needs through the Unmet Transit Needs (UTN) Process, which includes public meetings at both the local jurisdictional level and, by HCAOG, at the RTPA level. The HCAOG Board adopts a report of findings, which reports if there are "unmet transit needs" and if they are "reasonable to meet."[2] This process led to starting two new transit services: service to the Tish Non-Village in Loleta and service to Old Arcata Road between Jacoby Creek, Freshwater, and Myrtle Avenue. New services must meet minimum farebox return ratios. The Tish Non Village stop did not generate the anticipated ridership and failed to meet farebox return requirements. The service was discontinued. The Old Arcata Road service used an on-demand contract with City Cab so that costs were only incurred when a passenger called for a ride. However, this service did not generate the expected ridership. The Old Arcata Road service will be discontinued as of June 30, 2021.

A systematic review examining public transportation use and physical activity found that use of public transport was associated with an additional 8 to 33 minutes of walking per day.

– CDC 2021

Other unmet transit needs identified are an express bus between McKinleyville and Eureka, later weekday service on the RTS line, more frequent service on the ETS and RTS lines, and late night Friday and Saturday service on the RTS. The COVID-19 pandemic caused significant temporary changes in the ridership of public transit, with a 70% decrease during the height of public health stay-at-home orders.

HCAOG adopted the *Mobility-on-Demand Strategic Development Plan* in June 2020. The report recommended four RTS routes that could be altered to reduce travel time. The recommendations included removing stops within the City of Fortuna, eliminating the Manila and ACV airport stops, and to replace Trinidad to McKinleyville service with a Personal Mobility-on-Demand (PMoD) service. Additional recommendations were to explore Software-as-a-Service technologies that could assist in connecting riders to shared rides, such as a modern day hitchhiking application. Lastly, the Mobility-on-Demand Plan recommended a regional bike share program with suggested locations to help create a multi-modal transportation system.

[2] See UTN Report of Findings for definitions and annual findings. Available at www.hcaog.net/projects.

The McKinleyville Transit Study explores the possibility of transit service within McKinleyville. The study found that the ridership level in McKinleyville would likely not support a fixed-route transit system. The study recommends a pilot project using two vehicles to run an on-demand microtransit service.

Every five years, HCAOG updates the *Transit Development Plan* (TDP), which assesses efficiency of the major transit systems and recommends a regional capital improvement plan. The latest update is the *Humboldt County Transit Development Plan 2017-2022* (described further below). HCAOG assesses needs in the *Coordinated Public Transit-Human Services Transportation Plan for Humboldt County* (Coordinated Plan) (HCAOG, 2021). The needs summarized below have been identified by these committees and plans. The *UTN Report of Findings, TDP,* and *Coordinated Plan* are incorporated into VROOM by reference.

SERVICE GAPS

HCAOG assesses service needs through public outreach to stakeholders, including social service agencies, the SSTAC, and transit operators, and by researching relevant transportation plans and efforts around the county. The stakeholders identified these service gaps and unmet transportation needs during the planning process over the course of several years over multiple studies.

- Service to the Humboldt Bay area from unserved/underserved communities.
- Establishment of express bus routes along McKinleyville–Arcata–Eureka corridor.
- Later evening fixed-route public transit services.
- Extending RTS Mainline to serve College of the Redwoods on Saturdays
- Sunday fixed-route transit services.
- Improved bus stop amenities and access.
- Additional Dial-a-Ride/Dial-a-Lift services.
- Improved frequency on all services.
- Less wait time to connect with other buses.
- Shared resources between human service transportation providers.
- Additional senior-specific transportation.
- Enhanced awareness of existing transportation services.
- Improved or new transportation in tribal areas.

> Shared mobility services such as bike-share and car sharing programs can help reduce reliance on single-occupant vehicles, improve first-last mile connectivity to public transit, reduce the need for urban parking, and support more affordable travel options in California communities.
>
> *– CTP 2050*

Klamath-Trinity Non-emergency Transit (KT-NeT)

KT-Net provided critical transportation service to tribal communities in the Weitchpec and Hoopa area. Morning and evening service Monday through Saturday connected people to Willow Creek where they could access services like groceries and medical appointments. Unfortunately, the KT-NeT service stopped and the operator dissolved because of complications arising from the COVID-19 pandemic. The County of Humboldt is contracting with Tribe the Yurok Tribe Transit Service for the Yurok to operate public transit in the Orleans-Weitchpec- Hoopa area. This service is expected to begin in 2022, filling an important transit need.

TRANSIT SERVICE CHANGES & RECOMMENDATIONS

The Transit Development Plan (TDP) is a short-range plan updated every five years. HCAOG adopted the current version, *Humboldt County Transit Development Plan 2017-2022,* in November 2017. The TDP will be updated again in 2023 and when adopted will be incorporated in this RTP by reference. The 2017 TDP recommends service alternatives for the Arcata & Mad River Transit System (A&MRTS, City of Arcata); Southern Humboldt Intercity, Willow Creek Transit Service, and Eureka Transit Service (all operated by Humboldt Transit Authority). The respective jurisdictions have discretion for prioritizing the TDP recommendations. As the TDP notes, the appropriate alternative(s) will depend on how an agency chooses to balance "the desire for ridership growth and the financial realities of available operating funding." Transit operators regularly review route performance data and can adjust schedules and services in response to ridership on an ongoing basis.

The U.S. DOT reported that public transportation (school, intercity, transit bus, light rail transit, and subway) accounted for less than 1% of transportation fatalities in 2011, while private passenger vehicles accounted for more than 75% of transportation fatalities.

– CDC 2021

The *TDP 2017-2022* recommends the following alternatives:

- ☐ For A&MRTS:
  - Starting weekday service at 6:00 a.m. while HSU is in session;
  - serving the Community Center on demand; and
  - serving South G Street on an existing route; and
  - suggests that a "reasonably good" option could be the shuttle service between Arcata's downtown core and the HSU campus.
- ☐ For Southern Humboldt Transit:
  - Convert service to intercity trips only.

The TDP analyzed scheduling options for Eureka Transit Service (ETS) in response to common requests for longer service hours. The TDP did not analyze other alternatives because the City of Eureka was re-evaluating ETS's existing loop-route system, versus a line-route system. The *Eureka Transit Service Line Feasibility Study* was completed in October 2018. The study identified three network concepts that could increase service quality. Due to funding constraints, these recommendations have not been implemented.

ACTION PLAN: PROPOSED PROJECTS

For a list of short- term and long-term projects for regional public transportation, see Table *Transit*-4, below. Funded and unfunded projects are listed.

Short-term projects are predominantly for capital projects (bus fleet inventory). Three major components of capital improvement projects over the next 20 years are: 1) planning for and constructing alternative fuel infrastructure, such as hydrogen fueling stations, 2) purchasing new vehicles to meet regional and state goals for zero-emission busses (ZEB) and 3) developing an intermodal transit center in Eureka. In addition to capital projects, the region's multi-modal balance would benefit from expanded transit and paratransit services. Transit providers aim to expand service frequency, reduce travel times between cities in the urban corridor of McKinleyville – Arcata -Eureka, and increase multimodal and intermodal amenities.

In the short- and long-term, if there is sufficient funding, the region will work to implement projects, such as to expand service, that are currently unconstrained (unfunded).

Table *Transit-2.* **Regional Projects for Public Transportation**

Operator / Agency	Short or Long Term	Description	Mode Shift	Lowers VMT	ZEB Fueling	ZEB Capital	Vision Zero	Funding Source	Implementation Year(s)	Cost in year of expenditure[2] ($000)
HCAOG	ST	Study benefits, tradeoffs, and feasibility of local/regional fare-free transit pilot(s) and program(s)	X	X				TDA and/or planning grants	2022-2024	TBD
HTA	ST	Design and construct hydrogen fuel station			X			TIRCP federal grant (TBD)	2024	16,000
HTA	ST	Willow Creek zero-emission fueling infrastructure	X		X	X		FTA 5311/TIRCP (TBD)	2024	500
HTA	ST	Satellite office/transit hub in Redway	X	X			X	Not funded (TBD)	2023	350
HTA	ST	McKinleyville Transit Hub in Town Center	X	X			X	Not funded (TBD)	2025	420
HTA	ST	Eureka Intermodal Transit Center	X	X	X		X	TIRCP grant (TBD)	2024	4,250
HTA	ST	ETS Bus Replacement (2) ZEB	X	X		X		FTA 5311/5339	2026	2,000
HTA	ST	ETS Bus Replacement (3) ZEB	X	X		X		FTA 5311/5339	2021	2,700
HTA	ST	DAR Van replacement (3)	X	X			X	FTA 5310	2021	210
HTA	ST	SHI Bus Replacement (4)	X	X			X	FTA 5311	2022	765
HTA	ST	WC Bus replacement (1)	X	X			X	FTA 5311	2023	260
HTA	ST	RTS Bus replacement (2) HFCB	X	X		X		FTA 5311/TIRCP	2023	2,290
HTA	ST	SHI Bus replacement (2)	X				X	FTA 5311/5339	2024	530
HTA	ST	RTS Bus replacement (2) HFCB	X			X		FTA 5311/TIRCP	2024	2,300
HTA	ST	SHI Bus replacement (1)	X	X				FTA 5311/5339	2025	184
HTA	ST	RTS Bus replacement (5) HFCB	X	X		X		FTA 5311/TIRCP	2026	7,300
HTA	ST	RTS Bus replacement (4) HFCB	X	X		X		FTA 5311/TIRCP	2027	4,900
HTA	ST	RTS Bus replacement (2) HFCB	X	X		X		FTA 5311/TIRCP	2029	2,600
HTA	ST	ETS Bus Replacement (2) ZEB	X	X		X		FTA 5311/5339	2031	2,400

HTA	ST	RTS increased frequency (e.g. express service between McKinleyville and Eureka, & late night service)	X	X			X	Not funded (TBD)	2023-2043	8,000 ($400K/year x 20 years)
HTA	ST	Bus parking restructuring	X					Not funded (TBD)	2022	750
HTA	ST	Additional maintenance bays	X					Not funded (TBD)	2022	500
HTA	ST	Solar PV system (Micro-Grid)			X			Not funded (TBD)	2022-2025	1,530
HTA	ST	Feeder bus lines in McKinleyville, Manila, Trinidad and Fortuna to connect to RTS commuter line	X	X				Not funded (TBD)	2023-2043	10,760 ($538K/year x 10 years)
HTA	ST	Microtransit pilot program in McKinleyville	X	X				Not funded (TBD)	2025	500
HTA	ST	Park-and-Ride lots with multi-modal facilities (e.g. bike lockers, bus shelter), located near transit stops (6)	X	X		X	X	Not funded (TBD)	2023-33	600
Arcata	ST	Bus replacement (2) ZEB	X	X	X	X		AHSC/Local/TDA	2022	1,836
Arcata	ST	Bus replacement (2) ZEB	X	X		X		FTA 5311/5339	2026	1,990
Arcata	ST	Bus replacement (Gas Cutaway)	X	X				FTA 5311/5339	2026	193
Arcata	LT	Solar PV system on transit center roof					X	Not funded (TBD)	2031	910
Fortuna	ST	Bus replacement ZEB	X	X		X		FTA 5310	2023	415
Fortuna	LT	Bus replacement (2) ZEB	X	X		X		FTA 5310	2031-2035	975

[1] Short-term (ST) is in the next 1 to 10 years (2021 to 2030); long-term (LT) is in the next 11 to 20 years (2031-2040).
[2] Assumes 2% annual inflation.

*Annual cost

ZEB= zero emission bus; HFCB= hydrogen fuel cell bus

Short-Term Total	$77,033
Long-Term Total	$1,885
Regional Projects–Funded (Constrained) **Subtotal**	$54,098
Regional Projects–Unfunded (Unconstrained) **Subtotal**	$24,820
PUBLIC TRANSPORTATION PROJECTS TOTAL (000)	**$78,918+TBD**

PERFORMANCE INDICATORS

In addition to meeting reporting requirements, performance indicators should be used to gauge transit goals, policies, operations, budgeting, and funding. Some performance measures are specifically required for public transit and paratransit. For example, transit agencies must track performance for federal reporting requirements (the National Transit Database), for documenting compliance with the Americans with Disabilities Act (ADA), and for some federal and state grant applications.

Performance indicators will help identify public transportation benefits and needs for the agency, passengers, and the community.

Table *T ransit-3*. **Regional Transit Service Performance Indicators for Operations**

Performance Goal	Indicator	Standard
Safety & Security	• Miles between preventable accidents	Target > 500,000; minimum>100,000
	• Passenger injuries per 100,000 miles	Less than 1
	• Security-related incidents per 1,000 passengers	
Service Quality Reliability	• Average system peak headway	Goal is 100%; minimum performance level is 90% peak and 94% off-peak.
	• Percentage of on-time departures (on-time defined as within 5 minutes of scheduled time).	
	• Dial-a-ride/ Dial-a-lift: maximum wait time	< 30 minutes
	• Number of service refusals on demand-response service	Goal is 0; minimum performance is < 1 per day
	• Service span	
	• Increased frequency and reliability of transit service per $1,000 invested. (*from STIP/RTIP Guidelines*)	
Cost Effectiveness	*• Operating subsidy per passenger	Targets: $1.75-$12 depending on system, $20 (Dial-a-ride); maximum $2.50-$4, $10, $15, or $25
	*• Farebox recovery ratio	Targets 12%-40%, minimum 10%-26% (depending on system)
	• Operating cost per passenger (boarding)	
	• Operating cost per passenger-mile	
	• Operating ratio	
Cost Efficiency	*• Operating cost per vehicle service hour	
	*• Operating cost per vehicle service mile	
	• Operating cost per peak vehicle in service	
	• Vehicle miles (hours) per revenue mile (hour)	
Use & Productivity	• Percentage of capacity used by subscription trips	< 50% per hour
	*• Passengers per vehicle service hour	
	*• Passengers per vehicle service mile	
	*• Annual total passengers	
	• Annual passenger miles	
	• Average trip length	
	• Ridership per capita (annual)	
	• Ridership by market segment	
Increase In Ridership	*• Projected versus actual ridership.	
	• Increase in ridership correlated to new services or new areas served.	

Performance Goal	Indicator	Standard
	• Increase in ridership correlated to frequency and reliability of transit service. • Increased ridership per $1,000 invested. (*from STIP/RTIP Guidelines*)	
Maintenance	• Miles between service calls • Road calls per monthly mileage • Maintenance cost as % of operating cost	
Transit Investment/ System Preservation	• Average vehicle fleet age • Spare ratio • Local/State/Federal revenue • Operating funding per capita • Capital funding per capita • Percent of Zero Emission Busses (ZEB)	

*Performance measures that are currently reported in the 5-Year *Transportation Development Plan*

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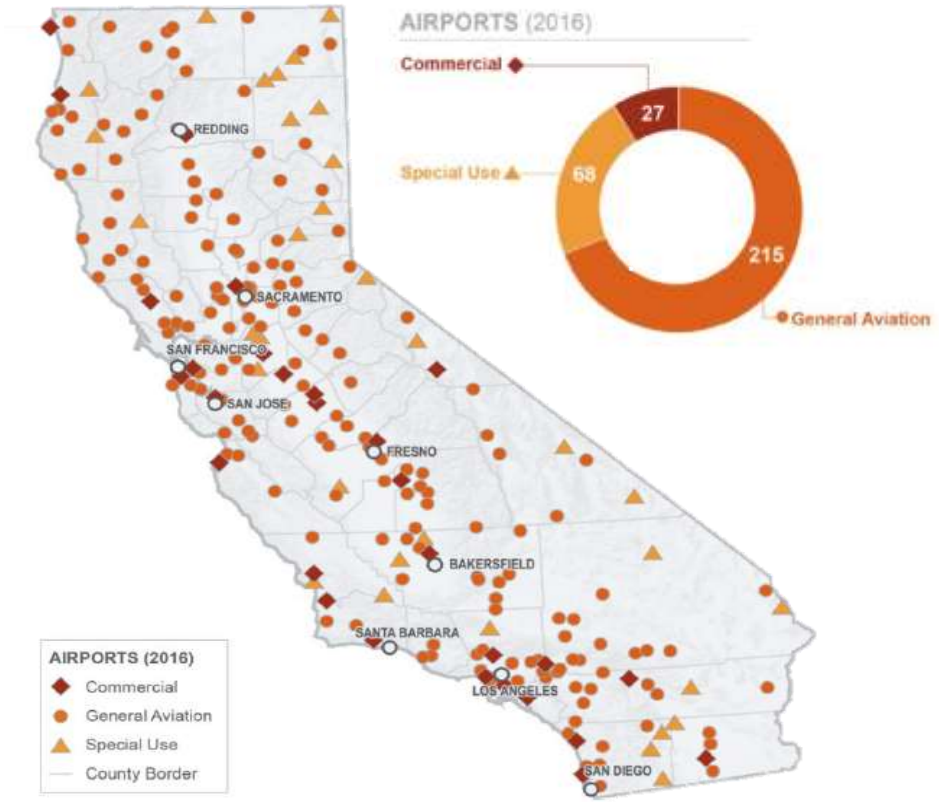
Transportation Development Act (TDA) Unmet Transit Needs Report of Findings: FY 2021-22, HCAOG. (Adopted June 2021)

10. AVIATION SYSTEM ELEMENT

The aviation system is part of a multimodal transportation system, as it connects people and packages to surface, sea, and rail transport. Aviation is a part of the global transport system; California's more than 300 airports move goods to and from domestic and international markets. The Humboldt region's nine public-use airports, give residents and visitors access to faster travel which can connect them to interregional, interstate, and international destinations.


Photo credit: humboldtgov.org

California's public-use airports are also job centers, trade hubs, and emergency facilities; serving a variety of freight, passenger, as well as related business and government operations. As the single commercial airport in the region, California Redwood Coast–Humboldt County Airport is a key transportation asset for the region's mobility and its tourism and business economies, and preparedness for disaster response and recovery.



Source: Caltrans 2021

AIRPORT ACCESS & MOBILITY

In the recent update of the California Transportation Plan 2050 (CTP 2050 (February 2021 Draft)), Caltrans emphasizes the State's goals for integrating the aviation system with a multi-modal transportation system:

> "Aviation gives the State's multimodal transportation system access, range, and speed."
>
> *— 2017 RTP Guidelines for RTPAs*

BY 2050. As the economy recovers and interregional travel and tourism begin to rise, California's airports will become increasingly vital elements of the state's multimodal transportation system. California's Aviation System Plan is focused on enhancing future connectivity between air travel and other modes, improving airport access in small and rural communities, and expanding sustainable energy solutions to curb aviation-related emissions.

AIRSIDE & LANDSIDE

For those familiar with airport operations, "airside" and "landside" are terms that distinguish between the areas dedicated for boarding flights and the areas more related to ground transport. When navigating around airports, landside generically means the area outside (external to) the passenger boarding area, and airside generically means the internal area for boarding aircraft, including skyways and runways. The boundary between the two is that area of security checkpoints, and passport and customs control. When discussing airports in the context of transportation planning, the landside and airside areas are considered more broadly. In this context, the landside area encompasses the external roads and other travelways that give ingress and egress to the airport, which usually means local roads and state highways. The broader airside includes the airport's surface grounds for ground support and emergency vehicles, including ramps, aprons, runways, and taxiways.

Congestion and other barriers on either side can impede mobility. Congestion on the landside can affect whether passengers make or miss their scheduled flights; congestion on the airside can affect how well airplanes meet their scheduled arrival and departure times. In this sense, landside deals more with ground transportation, whereas airside deals more with air transportation. In furthering the goal for regional transportation mobility, access, and connectivity, the multi-modal transportation system focuses on local airports' landside.

Ground access to airports is important not only to passengers, but also to airport employees, air cargo, and public transit. To have an integrated, multi-modal system, people must have a choice of modes to reach an airport, with access being comfortable and convenient for walking, biking, transit, and taxis/shuttles, as well as driving. The quality of ground access also certainly affects goods movement/freight operations/performance. For instance, the pavement condition (particularly for heavier trucks), number of lanes, and lane widths will affect freight access/movement.

> Prior to COVID-19, which caused nationwide enplanements to decline 93 percent, California's airports welcomed over 227 million passengers and moved 4.8 million tons of air-cargo annually.
>
> *— Caltrans, Feb. 2021*

AVIATION PLANNING



STATE PLANNING

The *California Aviation System Plan 2020* (CASP) is one of Caltrans' six modal transportation plans that together comprise the *California Transportation Plan 2050* (CTP 2050).

Caltrans updated the CASP 2020 with an explicit purpose to identify a new vision for California's aviation system, identify the relationships between aviation and other transportation modes, and seek out solutions to make California's aviation facilities resilient to the effects of global climate change while identifying new ways to serve California's growing population. (Caltrans 2020). The CASP includes the Aeronautics Division Capital Improvement Program (CIP) for both commercial and GA airports, as submitted to Caltrans by airport sponsors/owners. Generally, CIP projects are based on the airports' master plans (or comparable long-range plan). The CIP, which Caltrans compiles every two years, covers a 10-year timeframe.

REGIONAL PLANNING

Airport Land Use Compatibility

Every county in which a public-use airport is located is required to establish an Airport Land Use Commission (ALUC) (per California PUC, Sections 21670 et seq.) This Commission has the single purpose to protect airports and public safety by overseeing the compatibility of land uses adjacent to public-use airports. ALUCs are an advisory body to local planning jurisdictions.

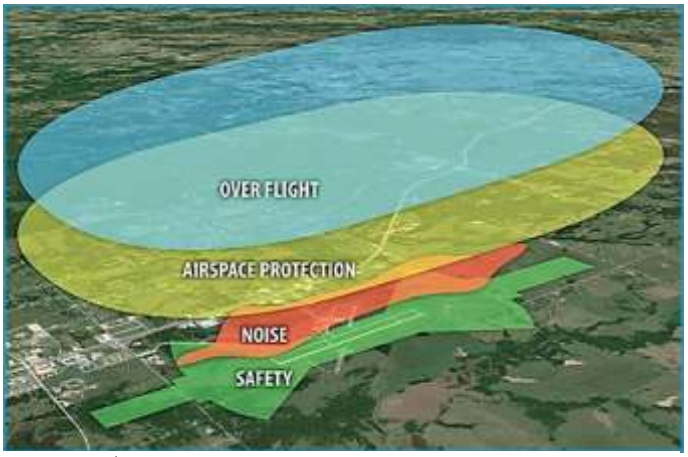
CTP 2050: OUR AIRPORTS

CHALLENGES

- **Carbon footprint** for planes has improved over the years, improvements are still needed; although planes contribute a large share of emissions to the environment, they are vital to our economy and livelihood.
- **Unmanned Aerial Vehicles (UAV)** driven by increasing consumer and industrial demand, may result in operational and safety issues related to airspace management.
- **Limited capacity** at many airports may not be able to accommodate long-term forecasted growth in demand.

OPPORTUNITIES

- **More efficient goods movement** as aviation provides a high-speed mode of transportation for high-value goods.
- **Shifting short-haul air** travel within the State to High-Speed Rail.
- **Improved connectivity** by increasing accessibility to emergency response and evacuation lifelines as air travel is often one of the most viable modes of transportation to rural areas of the state.
- **New technology** options such as electric and hybrid jet engines could reduce emissions and fuel consumption in the aviation industry.
- **Improved airport-land use planning** that incorporates airports as regional economic and transportation hubs.



Source: Mead & Hunt, Inc., 2019

The Humboldt County Board of Supervisors is the county's designated ALUC. As the ALUC, they have authorized a nine-member Aviation Advisory Committee (AAC) to advise them on aviation matters within the county. The two planning bodies, the ALUC and AAC, must evaluate potential conflicts concerning noise, safety, airspace protection, and aircraft overflight in land uses near an airport. They do this in two primary ways: (i) by preparing Airport Land Use Compatibility Plans (ALUCPs); and (ii) by reviewing local agency general and specific plans for consistency with the ALUCP goals and objectives (per CPUC §21676(a)). The ALUC makes safety recommendations via consistency determinations.

The *Humboldt County Airport Land Use Compatibility Plan* "provides the policies and criteria to be used by the ALUC when assessing the compatibility between the County's public use airports and proposed land use development in the areas surrounding them." The compatibility criteria set standards for building heights, building construction, and restricted uses of land. The standards and criteria are designed to

(1) minimize the exposure of the public to noise and safety hazards,

(2) provide for safer aircraft operations,

(3) protect the airport from encroachment and minimize incompatible development in the immediate vicinity of the airport, and

(4) ensure that prospective buyers of real estate (within the Airport Influence Areas) are notified that the airport and aircraft overflights are present (ALUCP, updated April, 2021).

While ALUCS can adopt ALUCPs, they do not have the authority to implement their own compatibility policies.

—California Aviation System Plan, 2020

The ALUCP applies to land use in areas surrounding all public-use airports within Humboldt County with these exceptions:

- the Hoopa Valley Airport located on the Hoopa Valley Reservation and owned and operated by the sovereign Hoopa Valley Tribe.
- ALUCs have no authority over federal, State or tribal lands
- the ALUCs have no authority over areas "already devoted to incompatible uses."

Airport Ground Access Improvement Program

The Redwood Coast Airport is a primary air carrier airport because it has annual enplanements over 10,000 (86,147 enplanements in 2019) (FAA-2021a). Primary air carrier airports are required to have an Airport Ground Access Improvement Program (AGAIP), which must address mass transit, road (major arterial and highway), and other ground access deemed appropriate by the Airport Land Use Commission (California Government Code 65081.1(a)). Since the update of the RTP in 2014, the HCAOG Board, with a recommendation from the Humboldt County Aviation Advisory Committee, has adopted the AGAIP as part of the RTP updates. See Appendix for full program report.

Airport Master Plans

The purpose of airport master plans is to assess the demand for airport facilities, and to guide actions that would help meet those demands. An airport master plan is prepared for, and adopted by, the agency that owns and/or operates the airport.

Each of the County-owned airports operates according to its respective Airport Master Plan. The current airport master plans are:

- *Arcata-Eureka Airport Master Plan Report, Public Review Draft.* Accepted by the Board of Supervisors on September 9, 2005 (County of Humboldt, 2005a). (This airport is being renamed the California Redwood Coast–Humboldt County Airport.)
- *Dinsmore Airport Master Plan Report,* Revised May 2007 (County of Humboldt, 2007a).
- *Garberville Airport Master Plan Report.* Accepted by the Board of Supervisors on September 4, 2007 (County of Humboldt, 2007b).
- *Kneeland Airport Master Plan Update.* September 2005 (County of Humboldt, 2005b).
- *Murray Field Airport Master Plan Report.* Accepted by the Board of Supervisors on September 4, 2007 (County of Humboldt, 2007c).
- *Rohnerville Airport Master Plan Report.* Accepted by the Board of Supervisors on September 4, 2007 (County of Humboldt, 2007d).

(Hoopa, Samoa Field, and Shelter Cove Airports do not currently have master plans.)

"Of the various ways to transport cargo, aircraft—with their speed and distance—are especially efficient at transporting long-haul, low-weight, high value, time-sensitive goods."

— *California Aviation System Plan, 2011*

REGIONAL AVIATION SYSTEM

The most well-known airport in Humboldt County is probably the California Redwood Coast–Humboldt County Airport (formerly the Arcata-Eureka Airport),1 because it is the only one that provides scheduled passenger service. It is, of the nine public-use airports in Humboldt County, the only commercial airport.

The region's other eight airports are all General Aviation (GA) airports. General Aviation consists of all aviation activity except military flights, scheduled passenger airlines, or air cargo service. GA airports serve a wide array of public interests and services, such as: individuals flying private aircraft, flight training, charter flights, recreational flying, on-demand cargo flights, private and corporate air transport, agriculture flights, firefighting, and medical and emergency response operations.

AIRPORT FACILITIES & SERVICES

Humboldt County has nine public-use airports (Figure 10.1, see Maps Tab). One is a commercial airport and eight are general aviation airports (GA). The County of Humboldt owns the commercial airport and five GA airports:

- California Redwood Coast-Humboldt County Airport (Arcata-Eureka) — commercial airport

[1] The County of Humboldt has applied to the FAA to rename the airport.

"While GA generates significant economic activity, commercial airlines dominate the aviation industry in terms of jobs and output."

— *California Aviation System Plan, 2020*

- Dinsmore Airport
- Garberville Airport
- Kneeland Airport
- Murray Field Airport
- Rohnerville Airport

The Humboldt County Aviation Department manages all County airports.[2]

The other three airports are owned by separate jurisdictions:

- City of Eureka owns and manages Samoa Field Airport (formerly called Eureka Municipal Airport);
- Hoopa Valley Tribal Council owns and manages the Hoopa Airport; and
- Shelter Cove Resort Improvement District #1 owns and manages the Shelter Cove Airport.

The Caltrans's Division of Aeronautics applies its own Airport Functional Classification system (apart from the FAA). It further categorizes GA airports as limited use, community, regional, or metropolitan. Humboldt's eight GA airports are classified as:

- **GA Limited Use Airports: Dinsmore, Hoopa** – Airports that provide limited access, usually located in non-urban areas, provide no services and may be used for a single purpose, and have a few or no based aircraft.
- **Community Airports: Garberville, Kneeland, Samoa Field, Shelter Cove** – Airports that provide access to other regions and states; located near small communities or in remote locations; serve, but are not limited to, recreational flying, training, and local emergencies, accommodate predominantly single engine aircraft under 12,500 pounds gross vehicle weight, provide basic or limited services for pilots or aircraft.
- **Regional Airports: Murray Field, Rohnerville** – Airports that in addition to interregional and interstate access may provide international access as well; serve several cities or counties in an area with a larger population base and higher concentration of business and corporate aircraft activity than Community airports. They may provide aviation fuel and most services for pilots and aircraft, and have a published instrument approach. They may have a tower.[3]

[2] The County recreated the independent Department of Aviation in 2018, changing it from a division under the Public Works Department.

[3] California Aviation System Plan: 2016 Policy Element (Caltrans Division of Aeronautics, October 2016).

Table *Aviation-1*. **Public-use Airports in Humboldt County: Location, Facilities, Services**

AIRPORT			LOCATION		FACILITIES					SERVICES
FAA Identifier	**Name**	**Owner**	**Community**	**Distance[1]/ Direction**	**Based Aircraft [2]**	**Longest Runway (ft.)**	**Surface**	**Lighted**	**Approach Visibility[3]**	**Control Tower, Airline Service, AvGas, Jet Fuel, Maintenance, Automobile Rentals, Food**
O33	Samoa Field (formerly called Eureka Municipal)	City of Eureka	Eureka	13 SW	10	2,700	Asphalt	No	Vis	n/a
O21	Hoopa	Hoopa Tribe	Hoopa	20 E	1	2,325	Asphalt	No	Vis	n/a
0Q5	Shelter Cove	Resort Improvement District #1	Shelter Cove	56 S	0	3,407	Asphalt	No	Vis	Food
ACV	California Redwood Coast	County	McKinleyville	–	27	6,046	Asphalt	Yes	Prec	Airline service[4], AvGas, jet fuel, automobile rentals, food
D63	Dinsmore	County	Dinsmore	37 SE	1	2,510	Asphalt	No	Vis	n/a
O16	Garberville	County	Garberville	55 S	18	2,783	Asphalt	No	Vis	AvGas
O19	Kneeland	County	Kneeland	17 SE	1	2,252	Asphalt	No	Vis	n/a
EKA	Murray Field	County	Eureka	11 S	22	3,011	Asphalt	Yes	NP	AvGas, maintenance
FOT	Rohnerville	County	Fortuna	25 S	29[5]	4,025	Asphalt	Yes	NP	AvGas, maintenance

[1] Distance (in nautical miles) and direction from Redwood Coast Airport.
[2] "FAA Information Effective 25 March 2021" (www.airnav.com/airports, accessed April 1, 2021).
[3] Statute mile. [Precision; Visual; Non-Precision].
[4] Including Air Taxi
[5] Bill Wickman correspondence to HCAOG Senior Planner Oona Smith, September 1, 2021.
Source: Arcata-Eureka Airport Master Plan Report" (Caltrans 2005b)

The following describes each airport's locale, services, and intermodal transportation links.

ACV California Redwood Coast–Humboldt County Airport (formerly the Arcata-Eureka Airport) (County of Humboldt)

The California Redwood Coast–Humboldt County Airport (Redwood Coast Airport/ACV, a.k.a. Arcata Airport or Arcata-Eureka Airport) lies on a 200-foot-high plateau above the Pacific Ocean. It is located in McKinleyville within the unincorporated County, approximately seven miles north of Arcata and 15 miles north Eureka. The United States Navy established the "Arcata-Eureka Airport" in 1942. The County of Humboldt owns and operates this airport. In 2013 the County Board of Supervisors approved renaming it to California Redwood Coast–Humboldt County Airport.

Airport grounds cover 745 acres. A 247-acre site at the airport is a designated Foreign Trade Zone (Site #4). The site is restricted to 50 acres of activated area. There is room for expanding facilities (e.g. box hangars, tie downs, and hangars) on the north side of the general aviation ramp. The County also leases space, for example, for the U.S. Coast Guard Search and Rescue Base and an FAA Federal Service Station. The airport's terminal building (1,400-square foot) houses offices of the Humboldt County Aviation Department, U.S. Coast Guard, and Transportation Security Administration (U.S. Department of Homeland Security). The terminal also houses three car rental companies, a conference room, and a restaurant (vacant in recent years).

Nine acres at the airport now support a solar and storage microgrid (a 2.3 megawatt photovoltaic array and eight megawatt-hour battery storage system), which is the largest solar array in Humboldt County at the time it commenced operations at year's end 2021 (Goff, Andrew 2018). The microgrid supports 18 electric accounts including the airport and the U.S. Coast Guard Air Station. The Schatz Energy Research Center (SERC) at Humboldt State University, designed the microgrid. The project partners were the County, Redwood Coast Energy Authority, SERC, and PG&E. The County's Aviation Department reports that the microgrid will reduce the airport's energy bills $50,000 annually (County of Humboldt 2021b).

Commercial Airline Service

The Redwood Coast Airport is a non-hub, primary commercial airport with both commercial passenger air service and freight service. Enplanements (i.e., commercial passenger boardings) at Redwood Coast Airport (ACV) declined each year between 2009 and 2015, primarily due to the loss of service during those years. (See Table *Aviation-2*) In 2010, Horizon Air (offering service through Alaska Airlines) cancelled daily flights to Seattle-Tacoma International Airport (SEA), then pulled out altogether in April 2011, which ended direct flights from ACV to LAX. One carrier then remained at ACV: Skywest operating United Express flights to Sacramento (SAC) and San Francisco International Airports (SFO). In December 2014, however, Skywest/United Express cancelled service to Sacramento. In 2015 the decline in enplanements reversed with an upswing of 6.7%, although the year's enplanements were still only 54% of 2009's. In April, 2016, Peninsula Airlines, Inc., (PenAir) began serving ACV with flights to Portland International Airport (PDX) and Redding Municipal Airport (RDD); however, in early August, 2017, PenAir dropped its Humboldt service, and a few days later announced that the company had filed for Chapter 11 bankruptcy protection and was also seeking to terminate its Crescent City flights.

ACV enplanements were trending upwards in 2018 and 2019. With the onset of the COVID-19 global pandemic in March 2020, flight service and enplanements fell in all markets across the world. However, in 2021, scheduled flights out of ACV grew for two carriers. In April, 2021, "America's first new mainline airline in nearly 15 years" (according to their press release) launched. Avelo Airlines is based out of the Hollywood

Table *Aviation-2.* **California Redwood Coast Airport Enplanements 2009-2019**

Calendar year	Enplanements[1]	Change from previous year[1]	Airline service changes
2009	102,440	--	
2010	93,402	-8.8%	Delta Airlines leaves (April); flights to SEA end (August)
2011	70,455	-24.6%	Flights to LAX end (April)
2012	61,705	-12.4%	
2013	56,682	- 8.9%	
2014	51,688	- 9.7%	Flights to SAC end (Dec)
2015	55,168	+6.7%	
2016	69,732	+26.40%	
2017	65,932	-5.45%	
2018	69,575	+5.35%	
2019	86,147	+23.82%	
2021	TBD		Avelo Airlines launchs service to Burbank (L.A. County), flights begin to Phoenix and Las Vegas

[1]FAA 2021a and b

Burbank Airport and offers non-stop flights between Burbank and 11 destinations (previously unserved routes) in the western U.S. Burbank to Arcata is one of its inaugural routes. The new airline launched with $19 one-way fares for the first month. Flights began May 2021. In August, American Airlines increased to two flights per day to Phoenix, Arizona.

Intermodal Links

Airport Road provides direct access from the airport to U.S. 101 and Central Avenue, a regionally significant roadway (arterial). The airport is served by two public transit lines: Redwood Transit System (local) and Amtrak (regional). Three car rental companies have staffed kiosks at the airport. Private (commercial) shuttle and taxicab companies and local hotels also provide ground transport.
The airport parking lot has 296 long-term parking spaces and 55 short-term parking spaces. Additionally, there are 27 parking spaces reserved for employees.

D63 Dinsmore Airport (County of Humboldt)

The Dinsmore Airport is located a quarter-mile east of Dinsmore, in an isolated area of eastern Humboldt County, less than three miles from the Trinity County line to the east. The airport is in a canyon of the Van Duzen River Valley. Lands uses surrounding the airport are timberland, agricultural, and rural residential.

The airport opened in 1956 and has mostly retained the original layout. Adjacent hills rise 1,000 feet above the runway elevation. Pilots flying in and out of Dinsmore Airport must know mountain flying and nonstandard approach/departure paths. Airport property includes 23 acres owned in fee-simple plus 426 acres in easements. There is one hangar. This airport operates only during daytime.

Intermodal Links

Dinsmore Airport is accessed by State Route 36, a two-lane road. It is almost 42 miles along SR 36 to the interchange with U.S. 101. The SR 36 directly accesses the airport's gravel parking area for automobiles, adjacent to the west apron. A gravel driveway leads to the east apron and automobile parking area. Access to the active airfield is provided at both aprons via pedestrian and vehicle gates; the entire perimeter is fenced to prevent unauthorized vehicles and pedestrians from entering the airfield.

O16 Garberville Airport (County of Humboldt)

Garberville Airport is located approximately two miles southwest of downtown Garberville. It rests on a bluff, elevation 551 feet above mean sea level. Adjacent to the west, terrain rises up to 1,000 feet above the runway within one mile. Rural residential uses are as close as a quarter-mile to the south and east of the airport. Other surrounding land uses are timberland and agricultural along the South Fork Eel River.

Humboldt County has owned and operated the airport since 1950. The County has 51 acres owned in fee and 6 aces of easements The airport has one runway and is mostly used for private planes.

Intermodal Links

Garberville Airport is accessed from Sprowel Creek Road, which connects to U.S. 101 two miles to the east.

O21 Hoopa Airport (Hoopa Valley Tribe)

The Hoopa Airport is located one mile southeast of Hoopa, serving the Hoopa-Willow Creek area. It is owned and operated by the Hoopa Valley Tribe. It is a public airport, classified as a Limited Use General Aviation Airport. The airport covers 40 acres and has one runway and aircraft tiedowns. The airport is open for day use only; however, in the case of emergencies the airport can place battery-powered lights along the edge of the runway to permit landings.

Intermodal Links

Hoopa Airport is on Hoopa Airport Road, which crosses Hospitality Road and intersects with Tish Tang Road, both local roads. The airport is approximately two road miles to State Route 96 via Tish Tang Road, and 14 miles to State Route 299 in Willow Creek.

O19 Kneeland Airport (County of Humboldt)

Kneeland Airport is on a butte approximately 15 miles southeast of the City of Eureka. The terrain falls sharply immediately beyond the end of its single runway; otherwise it is surrounded by mountainous open space. The airport is at elevation 2,737 feet above mean sea level, which often places it above foggy conditions. Thus, the Kneeland Airport principally serves as an alternate landing site when other airports in the Humboldt Bay area are temporarily closed due to fog (e.g., Redwood Coast, Samoa Field, Murray Field, and Rohnerville). The airport supports flight training and small-package delivery services. Cal Fire's heliport and associated buildings are located just west of the airport.

Intermodal Links

Kneeland Airport accesses U.S. 101 principally via Kneeland Road/Freshwater Road. The road distance to Eureka or Arcata is about 20 miles.

EKA Murray Field Airport (County of Humboldt)

Murray Field covers 131 acres immediately east of Humboldt Bay, at an elevation of 10.5 feet above mean sea level. It is located less than two miles from Eureka and approximately five miles from Arcata. The airport is bounded by Fay Slough to the north and by Eureka Slough to the southwest and east. The Airport has one runway (asphalt).

Murray Field Airport supports public, private, and commercial aviation services, including air freight transport businesses (see Goods Movement Element). Northern Air has operated there for over 40 years and is the airport's Fixed Base Operator (FBO). They lease two hangars from the County. Their services include fuel, transient aircraft parking, aircraft rental, flight instruction, and engine maintenance repair. Additionally, the U.S. Coast Guard conducts training maneuvers at Murray Field Airport.

Intermodal Links

From Airport Road, Murray Field directly accesses U.S. 101 and Jacobs Avenue, a frontage road to U.S. 101.

FOT Rohnerville Airport (County of Humboldt)

Rohnerville airport is located 0.8 miles south of Fortuna. The airport sits on a plateau above the Eel River, adjacent to rural residential area and undeveloped land. The airport has one asphalt runway, which ends at rapidly falling terrain south of the airfield. The current runway length can accommodate 100 percent of small aircraft with less than 10 passenger seats, excluding larger Cal Fire aircraft. A Cal Fire station has been operating on the east side of Rohnerville Airport since 1964. The Cal Fire station is an air attack base and a fire-fighter training facility.

Intermodal Links

The Rohnerville Airport has access to U.S. 101 via a route of arterial and minor local roads; the routes range from approximately four to 5.5 miles long. The lack of direct airport-highway access (for high volumes of cars and large trucks) constrains opportunities to expand the airport's airfreight services and general aviation, or to develop complementary commercial and industrial uses. The County of Humboldt, City of Fortuna, and Caltrans District 1 are partnering on the "Rohnerville Airport Connectivity Study" project to identify viable route alternatives and decide on a preferred alternative or prioritized alternatives. The study was partially funded in FY 2016-17 and HCAOG expects additional funding will be available in the next one to two fiscal years.

O33 Samoa Field Airport (City of Eureka)

Samoa Field Airport is located on a peninsula, west of downtown Eureka and Humboldt Bay. Samoa Field, formerly called Eureka Municipal Airport, is owned and managed by the City of

Eureka. The airport serves primarily recreational and personal business purposes. There is one asphalt runway; it is not lighted and night operations are prohibited. The airport has 11 hangars for public use and ten runway tiedowns. No aviation services are available. A WWII-era building onsite houses a private bed and breakfast.

Intermodal Links

The Samoa Field Airport is positioned next to road, rail, and harbor modes. It is accessed by New Navy Base Road, a regionally significant roadway (arterial), which connects the Samoa Peninsula to State Route 255 (northbound to Manila and Arcata, and eastbound to Woodley Island and Eureka). The airport is close to two harbor facilities: the Fairhaven Terminal and the Simpson Chip Export Dock (approximately 1.5 to 2 miles). The airport is also less than two miles from the end of the NCRA railroad tracks (Eel River Division) in Samoa.

0Q5 Shelter Cove Airport (Shelter Cove Resort Improvement District #1)

Shelter Cove Airport, in Shelter Cove, is located in the principal population center of Humboldt County's southern Lost Coast region. The land uses that surround the airport are commercial recreation, and low- to medium-density residential. Residential land use is within one-quarter mile of the airport. The airport is publicly owned and is operated by the Shelter Cove Resort Improvement District #1 (located in Shelter Cove). The airport has one runway; it is not lighted and night operations are prohibited. Aircraft parking is available. The Airport is unmanned and offers no services.

Intermodal Links

From the Shelter Cove Airport, local roads access Shelter Cove Road, a regionally significant roadway (County jurisdiction). It is approximately 25 miles to U.S. 101, near Redway/Garberville.

Table *Aviation-3*. **Forecast Airport Activity for Humboldt County, 2017-2039**

Airport	Forecasted Number of Based Aircraft	Forecasted Operations in 2039
California Redwood Coast Airport (ACV)	Assumed to remain similar to existing conditions in 2017 for all airports	Approximately 42,312 annual operations
Dinsmore Airport (D63)		Approximately 1,600 annual operations. [Based on slight increase to baseline operations and approximately 1,600 annual operations in 2017.]
Garberville Airport (O16)		Approximately 16,500 annual operations. [Based on slight increase to baseline operations and approximately 16,500 annual operations in 2017.]
Kneeland Airport (O19)		Approximately 7,000 annual operations
Murray Field Airport (EKA)		Approximately 55,450 annual operations or 152 average annual daily operations
Rohnerville Airport (FOT)		Approximately 27,500 annual operations or 75 average annual daily operations
Samoa Field Airport (O33)		Approximately 2,764 annual operations or eight average annual daily operations
Shelter Cove Airport (0Q5)		Approximately 2,208 annual operations or six average annual daily operations [Based on approximately nine annual average daily operations, with approximately 250 operations per month during the high-season, circa 2021.]

Source: Humboldt County Airport Land Use Compatibility Plan (ALUCP), February 2021.
Note: Hoopa Airport is not subject to the ALUCP.

The Tables *Aviation*-4 and *Aviation*-5 below show demand forecasts from 2010 to 2025 for Humboldt County public airports, as reported in the airport master plans or from airport staff. Future demand for aviation services was projected based on existing levels of based aircraft and annual operations.

GOAL, OBJECTIVES, & POLICIES

GOAL: The regional aviation system has safe and efficient facilities and services. It is part of a strong multimodal transportation system and is adequately linked to the national aviation network for freight and passenger service. Humboldt's public-use airports and adjacent land uses and circulation patterns are compatible.

OBJECTIVES: To strive for this goal, HCAOG shall support policies that help achieve the RTP's main objectives/planning priorities (in alphabetical order):[4]

MAIN OBJECTIVE:	AVIATION SUB-OBJECTIVES (♦) AND POLICIES
Balanced Mode Share/ Complete Streets	♦ Retain and enhance Humboldt County's access to scheduled passenger airline service so that residents, visitors, and businesses have transportation mobility options. ♦ Increase intermodal connections between regional aviation facilities and the surface transportation system for freight and for all airport users, including passengers, tenants, and employees.
	Policy AS-1. HCAOG shall support efforts to integrate aviation with other modes of transportation for the conveyance of people and goods. HCAOG shall encourage programs and projects that improve multimodal surface transportation to the commercial airport (e.g. transit/microtransit, secure bicycle storage, safe pedestrian access, rideshare, mobility on-demand). HCAOG shall apply Complete Streets strategies to commercial airport access road improvements for regional projects included in the Regional Transportation Plan and/or the accompanying Airport Ground Access Improvement Program (AGAIP) for the Redwood Coast Airport (per California Government Code §65081.1(a)).
Economic Vitality	♦ Improve the economic benefits of the regional aviation system's air freight, commerce, and tourism capacities.
	Policy AS-2. HCAOG supports improving ground access to airports in order to enhance passenger, air cargo, and general aviation airport opportunities. (Consistent with California State Aviation Plan–Policy MB-3.)

[4] The objectives are described in more detail in Chapter 2, Renewing Our Communities.

MAIN OBJECTIVE:	AVIATION SUB-OBJECTIVES (♦) AND POLICIES
Efficient & Viable Transportation System	♦ Maximize the utility and compatibility of regional air freight and passenger airline services with adjacent land uses. ♦ Provide affordable and sustainable multimodal options for small and rural communities to access the national air transportation system.
	Policy AS-3. HCAOG shall support regional, long-term airport planning to maintain the utility of Humboldt County airports and maximize connections to the national aviation network, including intermodal connections. HCAOG encourages airport operators to review airport needs and regularly update airports plans, and implement capital improvement programs. **Policy AS-4.** HCAOG shall support fix-it-first facility improvements for airports and efforts to maintain and expand air freight and scheduled passenger airline service for Humboldt County.
Environmental Stewardship & Climate Protection	♦ Reduce air pollutant emissions and air quality impacts of air freight transport and air passenger travel.
	Policy AS-5. HCAOG shall promote programs to reduce aviation-related air pollution, including promoting projects and programs that increase the energy efficiency and use of clean energy sources in aviation transportation.
Equitable & Sustainable Use of Resources	♦ Reduce aircraft noise, ground access congestion, and encroachment concerns resulting from conflicts between incompatible land uses and airport space.
	Policy AS-6. HCAOG supports lead agencies' regulatory authority to ensure that land use and proposed development in the vicinity of public airports are compatible with airport activities. (Consistent with California State Aviation Plan 2016– Policy PL-2)
Safety & Public Health	♦ Achieve orderly expansion of airports and adoption of land use measures and transportation designs that minimize the public's exposure to safety hazards within areas around public airports. (Consistent with California Aviation System Plan 2020)
	Policy AS-7. Support the Airport Land Use Commission and airport operators in identifying, avoiding, and eliminating activities which introduce potential aviation safety hazards, airspace hazards, or security hazards.

NEEDS ASSESSMENT

The top priority need for airports is to meet all safety requirements. Safety needs include proper design and conditions for all airport facilities (e.g., access roads, boarding areas, runways, etc.), proper security, and compatible land uses around airports. After safety, priority needs are determined by how well the region's airports are meeting the demand for aviation services, and whether or not opportunities and fiscal resources are available to meet the need.

GROUND ACCESS

Ground access needs around airports arise from constraints such as congestion, inadequate or substandard bicycle, pedestrian, and Americans with Disabilities Act access, poor internal and external circulation, and inadequate signage or traffic controls. Constraints that impede efficient cargo and commerce transport include congestion, inadequate intermodal services (e.g., freight, rail, transit), inadequate local roads, conflicts between goods movement and passenger operations, and poor airport access due to surrounding land use encroachment (Caltrans 2020).

> "The (Aeronautics) Division considers promoting a safe aviation environment for pilots, passengers, and persons on the ground its most important obligation."
>
> —*California Aviation System Plan, 2016*

The Airport Ground Access Improvement Plan (AGAIP) for Redwood Coast Airport states, "The dominant ground transportation issue is the lack of pedestrian and bicycle connectivity to access the airport terminal from adjacent properties." The AGAIP identifies potential improvements, some of which are: pedestrian facilities on Airport Road and Airport Loop Road, and bicycle lockers. Refer to Appendix II, "Airport Ground Access Improvement Plan for California Redwood Coast– Humboldt County Airport" for full report.

CLIMATE CHANGE & SEA LEVEL RISE

The global climate crisis from greenhouse gas emissions will impact the aviation system. The *California Aviation System Plan* (CASP 2020) discusses where airports are particularly vulnerable to sea-level rise, and identifies the 11 California airports that will be affected by SLR as water increases above the existing mean higher highwater datum (MHHW). Four of these 11 are commercial service airports. One coastal airport in Humboldt Bay and four airports adjacent to the San Francisco Bay are vulnerable to a 3-foot increase in SLR, according to the CASP 2020 (Caltrans 2021). The following two tables and map, excerpted from the CASP 2020, show Humboldt's vulnerable airports:

Table 6-6: California Airports Vulnerable to Sea Level Rise

Airport (FAA ID)	Sea Level Rise (above MHHW)			
	0 feet	3 feet	5 feet	10 feet
Humboldt Bay Area				
Murray Field Airport (EKA)		Y	Y	Y
Samoa Field (O33)				Y
San Francisco Bay Area				
Sonoma Valley Airport (0Q3)		Y	Y	Y
Napa County Airport (APC)				Y
Gnoss Field Airport (DVO)	Y	Y	Y	Y
Metropolitan Oakland International Airport (OAK)			Y	Y

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Source: Caltrans 2021

Below, "Table 6-7" predicts the extent of SLR that would occur at coastal airports based on three probability scenarios: high, medium, and low probability.

Table 6-7: Projected Sea Level Rise: 2030-2050

Year	High probability (66%)	Medium probability (0.5%)	Extremely Low probability
North Spit Gauge (Humboldt County) – as measured in feet			
2030	0.7	1	1.2
2040	1.1	1.6	2
2050	1.5	2.3	3.1
San Francisco Gauge – as measured in feet			
2030	0.5	0.8	1
2040	0.8	1.3	1.8
2050	1.1	1.9	2.7
San Luis Obispo Gauge – as measured in feet			
2030	0.5	0.7	1 foot
2040	0.7	1.2	1.6
2050	1	1.8	2.6
Santa Barbara Gauge – as measured in feet			
2030	0.4	0.7	1
2040	0.7	1.1	1.6

California Natural Resources Agency, *State of California Sea-Level Rise Guidance, 2018 Update*.

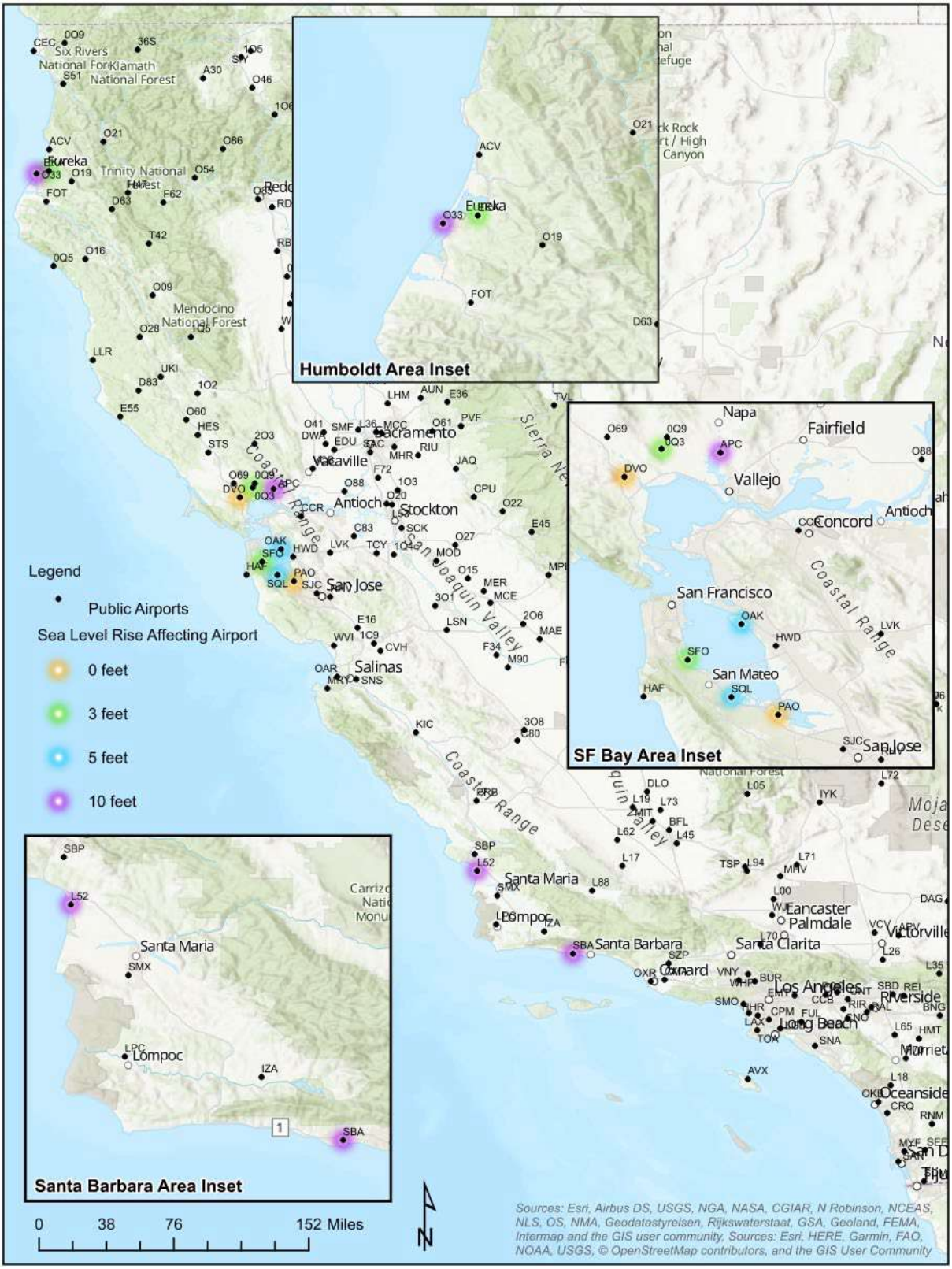
In Humboldt County, sea level rise from global warming is compounded by tectonic subsidence, and miles of coastline multiply the area that is at-risk of being inundated. These factors make Humboldt one of the State's counties most vulnerable to sea level rise. Local engineers, scientists, and planners have been monitoring and researching regional vulnerabilities and risks, especially around Humboldt Bay. A recent study has identified critical assets that are at risk for projected sea level rise; in the report the author states that Murray Field Airport is in an area already at-risk under current (2014) conditions, because it is located in areas that were mapped as vulnerable to tidal inundation by MMMW *(mean monthly maximum water)* tides (7.74 feet) and MAMW *(mean annual maximum water)* king tide (8.79 feet) and are most at risk if shoreline structures such as dikes and railroad beds are breached or overtopped (Trinity Associates 2015).

> "While our collective use of automobiles, our production of electricity, and the industrial and agricultural sectors each exceed the climate change impact of commercial aviation, passenger air travel is producing the highest and fastest growth of individual emissions, despite a significant improvement in efficiency of aircraft and flight operations over the last 60 years."
>
> — *EESI, 2019*

Correspondingly, Murray Field Airport is also deemed vulnerable to inundation under conditions projected in the near-term (2015 to 2050: MMMW +0.5 m.) and long-term (2050 to 2100: MMMW +1.0 m) planning periods.

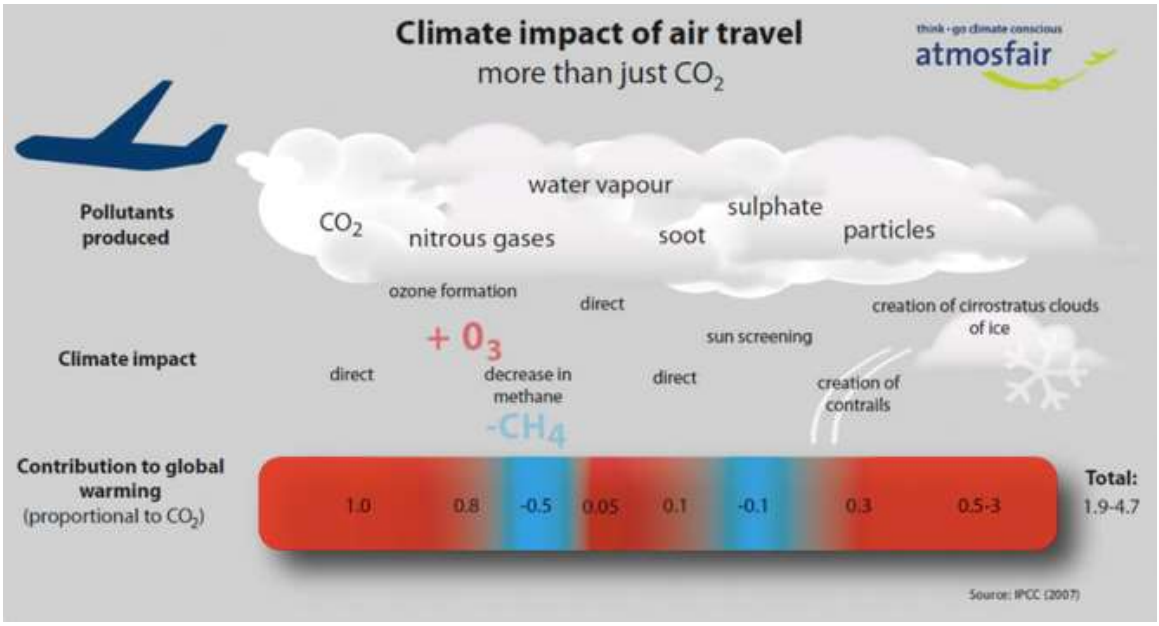
The aviation sector contributes greenhouse gas emissions from ground operations to elevations as high as 43,000 feet. In the past 15 to 20 years, airports worldwide have upgraded buildings and ground fleets for energy efficiency, resulting in cutting energy use and GHG emissions. Results from the air, however, have been the opposite: GHG emissions from commercial flights have been increasing due to increases worldwide in air travel and air freight.

Technological prospects for transitioning to zero-emission commercial aircraft lag far behind EV and ZEV cars and trucks. Such a transition is not expected within the next 20 years as it is not, as of yet, a top strategy that state or federal governments are planning or pursuing. Decisions and actions for reducing aviation GHG emissions fall largely on individual choice: To fly or not to fly?



Map reproduced from the CASP 2020 (Caltrans 2021)

Figure *Aviation*-1 **Sea Level Rise Affecting Public Airports in California**



Source: Atmosfair (Germany) (www.atmosfair.de/en/air_travel_and_climate/flugverkehr_und_klima/)

It would make sense to consider the carbon footprint when planning most trips, and whenever deciding on whether or not to fly. A decision-tree or standard framework for weighing the pros and cons can be used at the individual level as well as at an institutional or agency level. One example is the "Tyndall Travel Strategy," developed by the Tyndall Centre for Climate Change initially for the academic/scientific research professions. Their framework strategy includes a Code of Conduct to support a low-carbon research culture, a decision tree, and a reporting and scoring tool (Tyndall Travel Tracker http://travel.tyndall.ac.uk). The strategy is self-guided and self-monitored voluntarily. The Tyndall Center is open and transparent, making the air-travel emissions public because, they say, "We want the public to know that we are taking our emissions seriously and acting to reduce them." (More information at https://tyndall.ac.uk/about/travel-strategy/.)

One simple and available mitigation for air travel is to purchase carbon offsets for the GHG emissions contributed by one's flights. A carbon offset represents reducing one metric ton (approximately 2,205 pounds) of carbon dioxide emissions. Revenue generated from carbon offsets helps fund projects that sequester carbon. Carbon offsets can be purchased to offset any mode of travel or any activity that contributes GHG to the atmosphere.

Carbon offset programs exist at local, state, national, and international levels, and fund carbon-sequestration projects across the globe. HCAOG encourages travelers to buy carbon offsets, especially for local sequestration projects.

FACILITY NEEDS

The summaries below describe what local airports need in order to accommodate existing and forecasted demand for aviation services. Following in the next subsection, the Action Plan, Table *Aviation-6* lists each airport's proposed Capital Improvement Plan projects.

California Redwood Coast- Humboldt County Airport

The recently updated *Airport Land Use Compatibility Plan* listed these improvements for the airport:

ACV – Planned Facility Improvements	
Airside	• Box hangars • Executive hangars • Runway 1 PAPI • Runway 19 PAPI • Corporate hangar area • Electrical vault • Relocated beacon • Air traffic control tower (ATCT) • Runway 14 touchdown zone lights
Landside	n/a

Source: Humboldt County ALUCP, Table G-1 (April 2021)

Dinsmore Airport: Runway

Dinsmore Airport's principal constraints to increasing operations are its runway length and non-standard approach and departure procedures. The runway length is 766 feet shorter than required for 75 percent of small airplanes with 10 passenger seats or less. It will be relatively more costly to extend or realign this airport's runway due to the sloping terrain, the location of Highway 36, and dense forest on the east and west sides of the airport. The *Dinsmore Airport Master Plan* recommends that Humboldt County request a modification of FAA standards to maintain the current width of the runway, to allow part of Highway 36 to remain inside the runway safety area, to allow nonstandard conditions with regard to the object-free area for Runway 9-27, and to maintain tiedowns within the aircraft parking limit. It also recommends that space be established and preserved for aircraft storage facilities, in case demands increase.

The *Humboldt County Airport Land Use Compatibility Plan* notes, "The planned improvements to the (Dinsmore) Airport shown in the Master Plan and on the ALP include a 20-year plan that discusses sites for future rehabilitation and reconstruction of the runway, ramp, storm drain, as well as fencing and gates" (ALUCP, April 2021).

Garberville Airport: Facilities for Future Demand

The *Garberville Airport Master Plan* shows a forecast of the airport adding eight based aircraft from 2005 to 2025. Between 2005 and 2014, however, the airport's based aircraft decreased from 20 to 18 (FAA 2014). If demand were to increase, development would include extending the apron further north; constructing two taxiway exits and hangars; and adding tiedown parking positions, aircraft storage units, and designated parking. The existing space at the airport could accommodate ten new tie-downs.

The recently updated *Airport Land Use Compatibility Plan* listed these additional improvements:

Planned Facility Improvements – Garberville Airport

Airside	• Design underground storm drainage for runway safety area (RSA) enhancement; construct. • Design ramp reconstruction, rehabilitation and expansion; construct. • Design relocation of wind cone and segmented circle; relocate.

Source: Humboldt County ALUCP (April 2021)

Hoopa Airport: Runway

The Hoopa Airport is a Limited Use General Aviation Airport, but it does not meet all the minimum standards of that class of airport. The airport's runway length and weight-bearing capacity are short of the minimum standards, according to the last General Aviation System Needs Assessment (GASNA) that Caltrans Division of Aeronautics prepared (Caltrans 2013).

Kneeland Airport: Runway Expansion

Operational levels at Kneeland Airport are most restricted by the runway length and clearance. The runway length (2,235 feet) is 885 feet shorter than required for 75 percent of small airplanes with 10 passenger seats or less. Expanding the runway has three major constraints:

1. The most significant factor is the environmental constraint presented by the Kneeland Prairie pennycress, a perennial herb of the coastal uplands of Humboldt County. The Kneeland Prairie pennycress is on the California Endangered Species list (since February 2000) and is a designated critical habitat. There are two known populations (colonies): one on either side of the airport's runway. The plant's endangered species status precludes modifying the airfield;
2. The Cal Fires' Helitack Base (for helicopter-delivered firefighting resources), located immediately west of the airfield, limits that airport's ability to satisfy lateral runway clearance requirements; and,
3. Topographic and geologic conditions "severely limit" how much the runway can be expanded (County of Humboldt, 2005a).

The updated *Airport Land Use Compatibility Plan* notes that Kneeland Airport's 20-year plan "mostly discusses stabilization and sealing of Runway 15 33" (Humboldt County ALUCP 2021)

Murray Field Airport: Preserve Land for Expansion

Murray Field Airport's priority needs are to construct the runway/taxiway and to install wildlife fencing. The *Murray Field Airport Master Plan Report* recommends that the County of Humboldt preserve three acres on the south/southwest side of the airport for future needs to expand airport facilities (i.e., based-aircraft storage and parking). The report also identifies three acres on the north side of the airport that might be useful for future airport development. The building area at Murray Field Airport are constrained by the presence of protected wetlands which attract wildlife. (County of Humboldt, 2007c).

Rohnerville Airport: Facilities for Future Demand

The *Rohnerville Airport Master Plan* (County of Humboldt, 2007d) outlines phased development to expand the airport facilities for projected growth. Development plans include: reconfiguring, expanding, or adding new aprons; constructing a new taxiway, T-hangers or tiedowns, and perimeter fencing; installing new runway lighting; and improving the runway safety area.

Samoa Field Airport: Airport Classification Standards

Although Samoa Field Airport is classified as a Community General Aviation Airport, it does not meet all the minimum standards of this airport class. The airport's longest runway does not reach the minimum length, width, or weight-bearing standards. Additionally, the airport does not have visual aid equipment, 24-hour on-field weather services, or an instrument approach procedure.

Shelter Cove Airport: Airport Classification Standards

Like Samoa Field Airport, the Shelter Cove Airport is also classified as a Community General Aviation Airport but does not meet all the minimum standards. It, too, does not have visual aid equipment, 24-hour on-field weather services, or an instrument approach procedure. Neither does its longest runway meet minimum standards for length.

ACTION PLAN: PROPOSED PROJECTS

The proposed projects in Table *Aviation-6* were identified from current Airport Master Plans (which date back to 2005-2007), and *Humboldt County Aviation Division of Public Works–Airport Capital Improvement Plan* (ACIP). Several projects had estimated implementation for years from 2014 to 2020; we have updated these implementation years to "unknown." Funds may or may not be available to implement these projects within the RTP's short-term or long-term planning horizon.

Table *Aviation*-4. **Regional Airport Capital Improvement Plan (CIP) and Planning Projects**[1]

Project Name/Description	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Redwood Coast Airport (Arcata Airport) – County of Humboldt					
Obstruction Mitigation Plan	tbd		tbd	unknown	$75
Pavement Maintenance Management Plan	tbd		tbd	unknown	$85
Taxiways B&G Drainage Improvements	tbd		tbd		
Air Freight Needs Assessment (Redwood Coast, Murray Field, and Rohnerville Airports)		tbd	tbd	TBD	$38
Phase 3 construct fire station	tbd		tbd	unknown	$3,700
Design runway lighting improvements*	699,653	0.00	78	unknown	$777
Obstruction Removal*	180,000	0.00	20	unknown	$200
Study hazard removal	tbd		tbd	unknown	$150
Construct runway lighting improvements*	4,398	0.00	489	unknown	$4,887
RNR TWY B&G/drainage (design complete 2006)	tbd		tbd	unknown	$509
Design roadway entrance to airport	tbd		tbd	unknown	$250
Construct Runway Lighting Improvements Phase 3*	3,208	0.00	356	unknown	$3,564
Safety Management System*	45	0.00	5	unknown	$50
Install sidewalk on Airport Road (see Complete Streets Element, Table *Streets*-4, for project details)					
				Subtotal	*$14,285*
Dinsmore Airport – County of Humboldt					
Design west end storm drain improvements	tbd		tbd	unknown	$50
Install fence and gates	tbd		tbd	unknown	$40
Design windsock and segmented circle	tbd		tbd	unknown	$42
Obstruction Mitigation Plan & AGIS Survey*	135	7	8	unknown	$150
Construct windsock and segmented circle	tbd		tbd	unknown	$88
Construct west end storm drain improvements	tbd		tbd	unknown	$300
Remove/lower hazard to aircraft/ obstructions*	135	7	8	unknown	$150
Construct fence and gates	tbd		tbd	unknown	$166
Design ramp improvements	tbd		tbd	unknown	$50
				Subtotal	*$1,036*
Garberville Airport					
Design runway	tbd		tbd	unknown	$53
Construct runway RNR	tbd		tbd	unknown	$368
Construct ramp RNR and expansion*	509	25	31	unknown	$565
Obstruction removal plan & AGIS Survey*	109	5	7		$121
Study removing or lowering hazards to aircraft	tbd		tbd	unknown	$50

Project Name/Description	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Design runway safety area drainage	tbd		tbd	unknown	$7
Remove or lower aircraft hazards*	180	9	11	unknown	$200
Construct runway safety area drainage	tbd		tbd	unknown	$564
Ramp improvements and apron expansion	509	25	31	2021	$565
				Subtotal	*$2,493*
Hoopa Airport – Hoopa Valley Tribe					
Taxiway extension to runway	tbd	tbd	tbd	unknown	$50
Kneeland Airport – County of Humboldt					
RSA study	tbd		tbd	unknown	$157
Study removing or lowering hazards to aircraft	tbd		tbd	unknown	$5
Design stabilization	tbd		tbd	unknown	$108
Construct stabilization	tbd		tbd	unknown	$1,078
Obstruction Mitigation Plan & AGIS Survey	135	68	8	unknown	150
Design fencing and gates	tbd		tbd	unknown	$45
Remove or lower hazards to aircrafts*	135	68	8	unknown	$150
Construct fencing and gates	tbd		tbd	unknown	$350
				Subtotal	*$2,043*
Murray Field Airport – County of Humboldt					
Construct wildlife perimeter fencing/gates	tbd		tbd	unknown	$609
ALP update	tbd		tbd	unknown	$83
Design AWOS system	tbd		tbd	unknown	$25
Beacon, security lighting, emergency generator connection	tbd		tbd	unknown	$25
Install and implement AWOS type system	tbd		tbd	unknown	$270
Construct Runway 12/30 Rehabilitation (Phase 2)*	810	41	50	unknown	900
Beacon, security lighting, emergency generator connection	tbd		tbd	unknown	$100
Design RWY/TWY RNR	tbd		tbd	unknown	$63
Construct RWY/TWY RNR*	584	29	36	unknown	$649
Design entry road rehabilitation	tbd		tbd	unknown	$40
Design lighting upgrade for runway and taxiway*	tbd		tbd	unknown	$50
Construct entry road rehabilitation	tbd		tbd	unknown	$480
Air Freight Needs Assessment—see under Redwood Coast Airport					
				Subtotal	*$3,294*
Rohnerville Airport					
Obstruction removal*	135	7	8	unknown	$150
Construct upgrade of RWY/TWY lighting system*	1,199	60	73	2021	$1,332
Rehabilitate Runway – Design*	132	7	8	unknown	$147

Project Name/Description	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Rehabilitate Runway – Construct Phase 2*	1,112	56	68	unknown	$1,234
Rehabilitate Runway – Construct Phase 3*	555	28	34	unknown	617
Design and construct wildlife exclusion fence/gates*	536	27	33	2021	$595
Rohnerville Airport Connectivity Study (with City of Fortuna, Caltrans)				unknown	$99
				Subtotal	$4,174
Shelter Cove Airport – SCRID No. 1					
Airport Land Use Plan Update	0	93	10.34	unknown	$103.4
Taxiway realignment planning	0	81	9	unknown	$90
Tiedown area paving, SE and NW tiedown	504	25.2	30.8	unknown	$560
Improve drainage – southeast tiedown area	0	450	50	unknown	$500
Pilots' lounge	0	67.5	7.5	unknown	$75
Taxiway realignment	630,000	31.5	38.5	unknown	$700
10 space pilot's parking lot planning and design	0	23	3	2026	$26
10 space pilot's parking lot	0	90	10	2027	$100
				Subtotal	$1,501
Samoa Field (formerly Eureka Municipal) – City of Eureka					
Resurface runway/repaint markings*	0	135	15	unknown	$150
T-Hangar Improvements	0	180	20	2021	$200
Resurface Parking Areas	0	0	0	2022	$0
Design T-hangars*	0	27	3	2023	$30
Construct ten T-hangars*	0	270	30	2024	$300
Remove/prune willow stand*	0	37.8	4.2	2026	$42
Install runway lights*	0	495	55	2027	$550
Construct security fencing*	0	139.5	15.5	2028	$155
				Subtotal	$1,130
				Subtotal	**$36,468**
	Regional Projects–Funded (constrained) **Subtotal**				TBD
	Regional Projects–Not funded (unconstrained) **Subtotal**				TBD
	REGIONAL AVIATION PROJECTS TOTAL (000s)				**$36,468**

[1]Projects identified in Airport Master Plans (2005-2007) unless noted otherwise.

[2] To estimate the cost in year of implementation, assume a 2% annual rate of inflation.

* Project is listed in the "California Aviation System Plan: Capital Improvement Plan Year 2017-2026 (Caltrans, May 2017)

Acronyms: Reconstruct and Rehabilitate (RNR), Automated Weather Observation System (AWOS), taxiway (TWY), runway (RWY), .

PERFORMANCE INDICATORS

The table below lists performance indicators for the region's aviation system. The table groups indicators by "goal," which correspond to the RTP's six main objectives/planning priorities.

Table *Aviation-5.* **Performance Indicators for the Regional Aviation System Operations**

GOALS	INDICATORS	MEASURES	DATA SOURCES
Safety	Have rates of crashes, fatalities, and injuries decreased?	• Severity of collisions and injuries. • Number of safety improvement projects implemented. • Fatal accident rate of commercial air carrier or general aviation.	Accident statistics collected by Caltrans District 1 Safety Division, CHP, local agencies, Federal Aviation Agency (FAA).
	Are safety accidents decreasing? Do all airports have a safety management system? Are airport tarmac areas and fueling facilities securely fenced? Are there secure boundaries for airport runways, taxiways, aprons?	• Number of runway incursions and/or operational errors. • Number of preventable workplace injuries. • Airports without a safety management system. • Area of unsecure fencing at airport perimeters, card access, gate monitoring system.	Airport Master Plans or safety reports, Caltrans Office of Aviation Planning, Division of Aeronautics, FAA statistics.
Balanced Mode Shares (Complete Streets)	Has access to active transportation trips to airports increased?	• Quantity and quality of multi-modal connections to commercial airport (e.g., public transit service, rideshare services, bicycle facilities, pedestrian access).	Passenger surveys.
Efficient, Viable Transportation System	Do aviation facilities meet standards for state of good repair?	• Condition of aviation facilities. • Total cost per capita to sustain (modal) system performance at base-year level. • Maintenance cost per capita to preserve (modal) system at base-year conditions.	Aviation Depts, Caltrans District 1, Harbor District, goods movement industry, StreetSaver or other pavement management software.
	Have investments improved system efficiency and/or productivity? Are aviation market shares increasing for freight or commercial passenger services?	Per one thousand dollars invested: • Increased frequency and reliability of aviation service. • Percentage of passenger seats filled on commercial flights .	Caltrans, Public Works Departments, local and state environmental compliance reporting, commercial airlines.

Table continues on next page.

GOALS	INDICATORS	MEASURES	DATA SOURCES
Environmental Stewardship & Climate Protection (CO_2 reduction)	Has fuel consumption decreased?	• Fuel consumption gallons per capita, countywide or regionwide. • Fossil fuel use ratio of passenger miles traveled (per modes). • Ratio of fossil fuel use to freight miles traveled. • Decrease in air pollution emissions.	Caltrans annual traffic counts, environmental and compliance reporting, FAA statistics, CARB.
Equitable & Sustainable Use of Resources	Have transportation investments advanced environmental justice (EJ) objectives?	• Percentage of RTP/RTIP expenditures in environmental justice tracts. • Percentage of homes within half-mile of airport, EJ and non-EJ tracts.	US Census, American Community Survey
	Are land uses and development compatible for adjacent transportation facilities?	• Acres of land adjacent to airports that are zoned compatibly for airport noise and height restrictions/acres of incompatible encroachment.	General Plan updates, Airport Land Use Compatibility Plan, Airport Master Plans.
Economic Vitality	Have aviation investments contributed to economic growth, including increases in access to jobs, markets, and/or services?	• Direct and indirect economic benefits from increased aviation options.	

REFERENCES

CITATIONS

Caltrans 2013 "201310xx_GASNA(1).xlsx" [Caltrans General Aviation System Needs Assessment document] accessed at http://dot.ca.gov/hq/planning/aeronaut/ documents/casp/index.htm ["California Aviation System Plan (CASP) Elements"], link: "Appendix IV Update (XLSX) 2013" accessed August 30, 2017).

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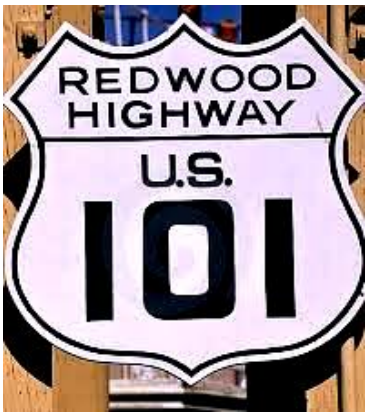
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11. GOODS MOVEMENT ELEMENT

The Goods Movement Element discusses what resources, needs, and opportunities the region has to transport goods and passengers via surface (roads/highways), maritime, aviation, and rail transportation.



EXISTING GOODS MOVEMENT SYSTEM

INTERMODAL GOODS MOVEMENT

To move goods efficiently over long distances, transportation systems must maximize viable land, sea, and air routes. An efficient intermodal transportation system will connect available highway, rail, port, and aviation facilities, and thereby give shippers and receivers access to inter-regional, national, and international markets. Port-rail connections can move large quantities efficiently, especially heavy bulk products such as sand, gravel, cement, and timber. Trucks can move smaller quantities faster because they can deliver to a buyer's doorstop and eliminate time spent offloading goods from a ship or train. Perishable products (flowers, produce, dairy) and overnight or emergency deliveries are moved most efficiently via air-truck connections.

In Humboldt County, the goods movement system includes highway (trucking), maritime, and aviation facilities. The common transportation facility that connects the three is U.S. 101, which accesses the county from north to south, and links Humboldt's cities. Major freight facilities that access U.S. 101 include the Port of Humboldt, the Redwood Coast Airport (formerly the Arcata-Eureka Airport), Murray Field Airport, and State Route 299 (and the NWP railroad line, albeit defunct). State Route 299, which junctions U.S. 101 in Arcata, is the main route for truck transport to/from eastern Humboldt County and Trinity County. State Route 255 (Arcata to Samoa Peninsula) is also an important intermodal route for the Port of Humboldt Bay. Additionally, Washington Street in Eureka has been designated as a route of intermodal significance because of its rail, port, highway, and pipeline accessibility. Figure 11.1 Harbor/Marine Facilities and Figure 10.1 Airports (see Maps Tab) show system facilities for moving goods into, out of, and within the county.

> California residents and businesses rely on the freight system to access goods, get shipments delivered, and to access the global marketplace. Efficient, reliable, and sustainable ports, intermodal facilities, railways, truck routes, and air traffic, are integral to the growth and success of California's world class economy.
>
> *– CA Transportation Plan 2050 (Draft)*

Freight Transfer (Transload) Facilities

Intermodal freight transfer facilities provide safe access, dedicated space, and sometimes storage for transferring (transloading) freight from one mode to another. Transloading also allows shippers to combine smaller shipments into a large one (consolidate), or, conversely, divide a large shipment into smaller ones (i.e. deconsolidate). There are currently several intermodal transfer facilities in the region; some are in use and some are not. Such freight transfer facilities include: the Schneider Dock on the Eureka Waterfront (port-truck transfer facility), Fairhaven

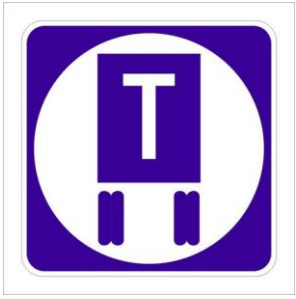
Terminal, California Redwood Chip Export Dock and the Sierra Pacific Terminal at 14th Street, on Humboldt Bay, and the Redwood Marine Terminal (#1 Redwood Dock, #2 Freshwater Dock) in Samoa.

HIGHWAY/TRUCK TRANSPORT

Surface transportation via truck is the most-used mode of moving freight in Humboldt County. Goods shipped by sea and by air are almost always transferred to trucks to be delivered to their final destinations. Thus, freight trucking provides a vital delivery link for international, domestic, and local markets and suppliers. Local trucking service represents the largest share of truck traffic in Humboldt.

Major Truck Routes

The highway system in Humboldt County includes routes designated Terminal Access, California Legal Network, and California Legal Advisory Routes. Terminal Access Truck Routes are portions of State routes or local roads that allow STAA trucks, which are commercial trucks that conform to the weight, width, and length standards allowed by the federal Surface Transportation Assistance Act (STAA). State Route 299 is free of STAA restrictions since Caltrans (District 2) reconstructed Buckhorn Grade in Shasta County in 2017; it is now designated an STAA Terminal Access Route between Interstate 5 and U.S. Highway 101. State Route 299 is the only STAA route serving the Port of Humboldt Bay. U.S. Highway 101 is a Terminal Access Route in Humboldt County except for a five-mile stretch from the Humboldt/Mendocino County line to Richardson Grove State Park. To move freight through this five-mile stretch, haulers driving longer STAA-conforming trucks must unload the cargo and transfer it to shorter trucks that are allowed on this section of highway. (There are some size exemptions, such as for cattle trucks.) Transferring freight adds to transport costs.



Terminal Access Route symbol

Unlike STAA trucks, California Legal Trucks have access to the entire state highway system. In short, STAA trucks can be longer than "California Legal" trucks. The California Legal Network highways in Humboldt are:

- SR 299 (Arcata to Trinity County)
- SR 255 (Eureka to Arcata)
- SR 211 (Fernbridge to Ocean Avenue in Ferndale)
- SR 200 (McKinleyville to Blue Lake)
- SR 96 east of Junction Route 169 (Willow Creek to Yreka)
- SR 36 in Humboldt at its eastern end (near Alton) and western end (Van Duzen River Bridge near Dinsmore).

On trucking routes designated as California Legal Advisory Routes, the California DOT (Caltrans) advises that trucks should have semi-trailers shorter than the 40-foot kingpin-to-rear-axle (KPRA) distance that is allowed on the rest of the California Legal Network. KPRA advisories range from 30 to 38 feet. Routes are restricted primarily because they have narrow lanes or tight radius curves. The tight curves make it difficult for longer trucks to stay within their lane while going around tight curves.

Humboldt's southern 5.1 miles of U.S. 101, at Richardson's Grove State Park, is a California Legal Advisory Route. It has a KPRA Advisory of maximum 32 feet long (livestock trucks are exempt from this restriction), which effectively prohibits STAA trucks.

However, Caltrans (District 1) has designed a project for U.S. 101 through Richardson Grove State Park to give STAA trucks access northbound into Humboldt. The project proposes to reconstruct 1.1 miles of U.S. 101 to "realign and widen curves and obtain two-foot shoulders in the park where possible, and four-foot shoulders outside the park without removing or significantly impacting old growth redwood trees" (Caltrans 2011). When this southern segment of U.S. 101 is redesignated as a Terminal Access route, STAA trucks will have uninterrupted access on U.S. 101 from the Oregon border to the San Francisco Golden Gate Bridge.

Caltrans faced legal challenges on the project's CEQA (State) and NEPA (federal) environmental reviews. Caltrans prevailed in the CEQA case (2012). In 2014, Caltrans voluntarily withdrew the Finding of No Significant Impact (FONSI) for its NEPA Environmental Assessment in order to analyze, per the State Appellate Court's findings, certain aspects of the impacts to redwood tree roots. As of (May) 2021, the project is still in litigation.

Transition to Zero-Emission Technology Target: Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
– CA Sustainable Freight Action Plan 2016

The other California Legal Advisory Routes in Humboldt are:

- SR 254 (Phillipsville to Stafford) (30-feet-maximum KPRA Advisory);
- SR 169 (Klamath to Weitchpec) (30-feet-maximum KPRA Advisory);
- SR 96 (Willow Creek to Yreka) (36-feet-maximum KPRA Advisory); and
- SR 36 (Fortuna to Johnstonville) (30-feet-maximum KPRA Advisory).

MARITIME TRANSPORT

Port of Humboldt Bay

California has twelve deep-water seaports that accommodate transoceanic vessels. Eleven are publicly owned and one (Benicia) is privately owned. The Port of Humboldt Bay is the only deep-water shipping port between San Francisco, 225 nautical miles south, and Coos Bay, Oregon, 156 nautical miles north. It is a working port that can handle vessels with domestic or international cargoes, including mid-sized cargo ships (Panamax) vessels, which can transit the Panama Canal locks. However, the Port of Humboldt Bay is currently the major underutilized deep-water harbor in the State. It is the only California port without rail access to the national rail network.



Photo: humboldtbay.org

"Marine terminals on Humboldt Bay are farther from inland markets than most other ports on the West Coast. Combined with a lack of rail infrastructure, this makes it unlikely that Humboldt Bay can attract high-volume marine cargo" (*Humboldt Bay Maritime Industrial Use Market Study-Final Report* (County of Humboldt, 2018).

The Humboldt Bay Harbor, Recreation and Conservation District (Harbor District), a countywide public local agency, manages Humboldt Bay pursuing the combined goals to promote commerce, navigation, fisheries, recreation, and to protect natural resources.

The Harbor District owns Kramer Dock and Redwood Marine Terminal on the Samoa Peninsula, and also owns and operates Woodley Island Marina facility, which is a full-service marina with 237 slips for commercial, recreational, research, and safety vessels. Woodley Island Marina has guest docking facilities, laundry and shower facilities, a restaurant, offices, and other facilities.

The Harbor District has been cleaning up and refurbishing Redwood Marine Terminal II (berth 2), which includes a 1,170-foot-long dock with deep-water access. Upon purchasing the site for $1.00 in 2013, the Harbor District worked with the U.S. Environmental Protection Agency to clean up acids and pulping liquors that were left behind in 2008 by the previous owners, Evergreen Pulp. The District then invested $3 million to upgrade warehouses and office facilities, and held a grand opening ceremony in October 2016. Tenants already operating at the site include businesses in mariculture (clam and oyster seeds), surface shipping, sea salt, and an electrical company.

Port Facilities

The Harbor District maintains six channels in Humboldt Bay, as follows:

Channel	Depth maintained, MLLW[1]
Bar channel	-48 feet
Entrance Channel	-48 feet
North Bay Channel	-38 feet
Eureka Channel - southerly segment	-35 feet
- northerly segment	16 feet
Samoa Channel and turning basin (north)	-38 feet
Fields Landing (Hookton) Channel	-26 feet

[1.] Mean Lower Low Water (MLLW): the average of the lower low water height of each tidal day.

Humboldt Bay channels access seven operating docks and nine deep-water berths. All docks serve ocean-going dry cargo vessels; one dock also serves liquid bulk cargo vessels. The following docks and terminals have active cargo terminals:

"Through careful planning, the District is committed to build the foundation for a real increase in the cargo handling capacity of the bay."
– Humboldt Harbor District website

Eureka/Samoa:
- Redwood Dock Site: Phillips Petroleum (formerly Tosco), Simpson-Samoa
- Dock B/Balloon Track (a Foreign Trade Zone)

Fields Landing:
- Fields Landing Terminal Area (a Foreign Trade Zone)
- Humboldt Bay Forest Products Terminal (Olson Dock)

Table *Goods*-1 gives more information on active shipping terminals serving Humboldt Bay.

Other Harbor Areas

Trinidad Harbor is a small cove on the northern rim of Trinidad Bay, approximately seventeen miles north of the entrance to Humboldt Bay. The Trinidad Pier is the northern-most oceanfront pier in California. Trinidad Harbor is used by commercial and recreational fishing boats and not by cargo vessels. The Trinidad Rancheria purchased the six-acre harbor site and pier in 2001, and in 2012 completed reconstructing the pier.

Shelter Cove is approximately 60 ocean miles south of Humboldt Bay (adjacent to Whitethorn in Southern Humboldt). Boating access to the sea is managed by the Humboldt Bay Harbor Recreation & Conservation District. Boating activities are for fishing and recreation, not freight.

See Figure 11.1 Harbor/Marine Facilities (go to Maps Tab).

Table *Goods-1.* **Active Shipping Terminals on Humboldt Bay**

Location	Shipping Terminal	Ownership	Primary Use
SAMOA PENINSULA (North Bay Channel)	1. Redwood Marine Terminal (Berths 1 & 2)	HBHRCD* (publicly owned)	By mill operators, fishing vessels, cruise boat, land and public dock access, and mariculture
	2.California Redwood Chip Export Dock	California Redwood Co. & Simpson Lumber Co	Bulk woodchips
	3. Fairhaven Business Park Terminal	Security National Properties	Logs, cruise boat
EUREKA WATER-FRONT (North Bay Channel)	4. Pacific Affiliates Dock	Dave Schneider	Multi-purpose utility dock; intermittent berthing of non-cargo vessels including Coast Guard, cruise boat and marine environmental/ safety
	5. Sierra Pacific Industries, Eureka Dock	Sierra Pacific Industries	Multi-purpose forest products dock; inbound log barges, outbound woodchip barges, occasional inbound lumbar barges
	6. Chevron Oil Terminal	Chevron Oil	Bulk refined petroleum products; dedicated to ocean barge every 7 to 8 days
FIELDS LANDING (South Bay)	7. Humboldt Bay Forest Products Terminal	Humboldt Bay Forest Products	

*Humboldt Bay Harbor Recreation and Conservation District. Sources: HBHRCD 2007, www.humboldtbay.org (January 2017)

Port Cargo

Forest products, mostly woodchips, are the Port's main cargo from deepwater ships. Between 1994 and 2016, according to the Humboldt Bay Maritime Industrial Use Market Study (County of Humboldt 2018), woodchips accounted for 90% to 100% of domestic shipments. However, shipping forest products from Humboldt Bay has been declining for decades, in some cases by more than 95%. "No domestic lumber shipments have occurred since 1998," "essentially no lumber exports have occurred since 1995," and "From 2010 through 2016 there were no foreign imports." The Port's main domestic cargo is petroleum products barged in from refineries in the San Francisco Bay area.

The market study pointed out that changes in the ship container industry (e.g., larger ships, larger marine terminals, and consolidation of shipping lines) make smaller ports non-competitive for container freight. The final report states, "it is unlikely that Humboldt Bay will become a container load center due to limits on the size of ship that can transit the navigation channels, the lack of railroad connections, and the limited local population base."

Humboldt Bay imports more than 90% of the gasoline and diesel fuel used in Humboldt County, and approximately 70% used in Del Norte, Trinity and Mendocino Counties.

Commercial fishing is another main industry moving goods in the Humboldt Bay Harbor. Over 200 commercial vessels list Eureka as home port, and approximately 130 commercial fishing vessels berth at the Eureka Public Marina. Over 500 vessels from other West Coast ports use the Harbor facilities annually. The Olson Dock, operated by Humboldt Bay Forest

Products, Inc., is also used for mooring commercial fishing vessels when it is not being used by commercial deep-draft vessels.

The Harbor District's *2003 Harbor Revitalization Plan* identified the Port's competitive advantages as being: waterfront industrial sites; large sites on the Samoa Peninsula with access to the 38-foot channel, relatively low-cost land, labor, and livability. The Plan notes that the most promising opportunities for the Port of Humboldt Bay Harbor include:

- marine-dependent industrial projects;
- niche dry and liquid bulk cargoes (e.g. bulk aggregates and rock to the Northern California construction market); and
- forest products.

Cargo objectives are also included in the Harbor District's *2010 Strategic Plan* and *2007 Humboldt Bay Management Plan*.

National Marine Highway Program

The Marine Highway Program was established by Congress, pursuant to the Energy Independence and Security Act of 2007 (and was expanded with legislation in 2012 and 2016). The program's primary goal is to reduce truck traffic on congested surface roads by diverting domestic freight (or passengers) to marine highway routes between U.S. ports. The marine highways are federally designated, and are named for the congested landside route it parallels, such as marine highways M-5 (parallel to Interstate 5) along the Pacific coast and M-580 (parallel to State Route 580) in California.

The Harbor District has tried to get funding for viability analyses and marketing for short-sea shipping from Humboldt Bay to the M-5 along the coasts of Washington, Oregon, and California. So far, however, the District has not been able to secure funding to cultivate potential markets to show that there is a demand for viable, sustained short-sea shipping.

Table *Goods-2*. **Foreign Trade Zones in Humboldt County**

F.T.Z. Site No.	Location/Description	Ownership
#1 Dock "B"	7-acre site at the public dock B in Eureka.	City of Eureka (inactive)
#2(A)	320-acre site on Samoa Peninsula; land set aside for industrial development.	City of Eureka
#2(B) Redwood Marine Terminal	66-acre site on Samoa Peninsula; existing facilities are predominantly wharves and piers for waterborne commerce.	HBHRCD
Site #3(A) Humboldt Bay Forest Products (Olson Dock)	62-acre site in Fields Landing.	Mr. Stanwood Murphy
Site #3(B) Fields Landing Terminal (Formerly Kramer Dock)	19-acre site in Fields Landing, south of Site #3(A).	HBHRCD
Site #4 Redwood Coast Airport	50 acres of activated F.T.Z. area (within a 247-acre site) at the Redwood Coast Airport.	County of Humboldt

FOREIGN TRADE ZONE

Foreign Trade Zones (F.T.Z.) are areas that are physically within the United States but are considered outside of U.S. Customs' jurisdiction. Thus, a company transporting goods in an F.T.Z. may be able to delay or reduce their duty payments on foreign merchandise, and/or may be exempt from state/local inventory taxes on foreign goods and domestic goods held for export. The Foreign-Trade Zones Board, which grants zone status, is comprised of the U.S. Secretary of Commerce and the U.S. Secretary of the Treasury.

Humboldt County has a designated Foreign Trade Zone (No. 248), which is sponsored by the City of Eureka. The zone is comprised of four designated sites, three around Humboldt Bay and one at the Redwood Coast Airport.

RAIL TRANSPORT

"As developable land is scarce and sold at a premium, abandoned rail lines and adjacent right-of-way offer one way to accommodate the need for passenger rail service, nonmotorized transport, and recreational services."
– California State Rail Plan 2013

The Northwestern Pacific (NWP) Railroad was acquired by the North Coast Railroad Authority (NCRA) through State and federal funds. The NWP's Eel River Division of rail lines north of Willits was purchased with State funds in 1992. The Russian River Division line south of Willits was purchased with federal funds in 1996. The NWP Railroad line, which formerly served Humboldt Bay, ceased service in 1998, when the NWP Eel River Division line washed out at several points in the Eel River Canyon. The Federal Railroad Administration ordered the NCRA to cease railroad operations on portions of the line until safety repairs were made (Emergency Order No. 21).

There have been significant changes regarding the NCRA, led by Senate Bill 1029 (McGuire, 2018). SB 1029 directed NCRA to transition its purpose to assessing the feasibility of preserving the railroad right-of-way into a 320-mile Great Redwood Trail. Senator McGuire's companion legislation SB 69 passed in September 2021, legislates renaming the North Coast Railroad Authority the Great Redwood Trail Agency on March 1, 2022. This successor agency has the full suite of powers necessary to carry out construction and operation of the trail. The CTC has authorized the NCRA to transfer all real property, the freight contract, and the freight easement for all right-of-way south of MP 89 at the Sonoma-Mendocino County line, and to railbank all right-of-way north of MP 142.5 at Outpost (just north of Willits).
The near-term future of the NCRA railroad right-of-way in Humboldt County is to preserve the public asset by railbanking, and convert it to active transportation use until the time comes to reinstate rail use. (Read more in the Commuter Trails Element.)

AVIATION TRANSPORT

Aviation's contribution to climate change – 3.5% of warming, or 2.5% of CO_2 emissions – is often less than people think. It's currently a relatively small chunk of emissions compared to other sectors. The key challenge is that it is particularly hard to decarbonize (aviation). We don't yet have the technologies to decarbonize air travel.

- Our World Data 2020

Because of its capacity for speed and distance, air transport significantly increases mobility for moving goods and passengers. Air freight is transported in dedicated cargo aircraft or in the cargo compartments of passenger aircraft (called "belly freight").

Humboldt's regional aviation system provides services for scheduled commercial flights, freight and air couriers, air ambulance, air charter, private pilots, law enforcement, and emergency response/operations.

There are nine public use airports in Humboldt County. The County of Humboldt owns six of the public airports; the Aviation and Airport Division of the County Public Works Department manages all six:

- Redwood Coast Airport (located in McKinleyville; also known as Arcata/Eureka Airport)
- Dinsmore Airport
- Garberville Airport
- Kneeland Airport
- Murray Field Airport (located in Eureka)
- Rohnerville Airport

The other three airports are:

- Samoa Field Airport (formerly called Eureka Municipal), owned and managed by the City of Eureka;
- Hoopa Airport, owned and managed by the Hoopa Tribe; and
- Shelter Cove Airport, owned and managed by the Resort Improvement District #1.

The Redwood Coast Airport is the region's sole commercial airport, meaning it is the only airport that offers scheduled (daily) passenger flights. It is served by three commercial passenger airlines. United Airlines offers flights to San Francisco and Denver; the new Avelo Airlines offers flights to Hollywood/Burbank; and American Airlines offers flights to Phoenix. The airport is also used by cargo (package delivery) companies; current companies are Federal Express, United Parcel Service, AmeriFlight, and Union Flight. Murray Field, a general aviation airport, also serves air freight. Federal Express, United Parcel Service (UPS), and AmeriFlight have been operating at Murray Field for approximately fifteen years.

See the Aviation System Element (and Figure 10.1 in the Maps Tab) for more information on Humboldt County public airports.

GOAL, OBJECTIVES, & POLICIES

The goal, policies, and objectives for the region's goods-movement system align with the RTP's overall goal and objectives. Furthermore, these goal and objectives are intended to also advance the vision to decarbonize California's freight transport system. Governor Brown articulated the need, in Executive Order B-32-15, for California to accelerate actions to transition to a more efficient, more economically competitive and less polluting freight transport system. HCAOG shares the States goal for its statewide system for the regional system: to focus on making the *existing* freight system more efficient through technology and other means.

GOAL: Goods move in and out of Humboldt County efficiently, predictably, and cost-effectively via an intermodal transport system. The system moves passengers and goods in a manner that is economically sustainable and environmentally compatible.

Objectives: The policies listed in the Goods Movement Element will help meet the RTP's main objectives (listed in alphabetical order). The Goods Movement policies below are grouped according to the RTP's main objectives.[1] The objectives support and work in tandem with one another; a policy can help meet more than one objective.

The tree symbol indicates objectives that are GHG performance measures (see Chapter 2 for all GHG performance measures and targets.)

MAIN OBJECTIVES:	GOODS MOVEMENT SUB-OBJECTIVES & POLICIES
Active Transportation Mode Share/ Complete Streets	◆ Improve goods mobility, reliability, and system efficiency in and out of Humboldt County. Connect road, sea, air, and rail transport modes and maximize the utility of each mode. ◆ Improve connectivity and balanced growth of the goods movement system. **Policy GM-1. (Intermodal)** HCAOG shall promote multiple uses of transportation corridors and strategic use of intermodal transfer facilities. **Policy GM-2. (Intermodal)** HCAOG shall encourage and support safe, multimodal accessibility at Humboldt's public use airports and seaports. **Policy GM-3. (Road/Trucking)** HCAOG prioritizes projects to design and maintain truck routes consistent with Complete Streets goals whenever safe and feasible.
Economic Vitality	**Policy GM-4. (Maritime)** HCAOG will support the Humboldt Bay Harbor, Recreation and Conservation District's efforts to develop a fully operational, sustainable, and environmentally compatible maritime transportation system as consistent with the Harbor District's mission. **Policy GM-5. (Aviation)** HCAOG shall help promote fully and efficiently utilizing air freight capabilities in Humboldt County, and shall support increasing regional aviation resources for intermodal goods movement, as compatible with multimodal and GHG emission-reduction goals.

[1] Chapter 2 fully describes the six main objectives.

	Policy GM-6. (Rail Right-of-Way) HCAOG encourages the highest and best use of rail facilities and rail rights-of-way in Humboldt County. HCAOG supports railbanking and preserving the Northwestern Pacific railroad rights-of-way until it is economically viable and environmentally compatible to restore freight or passenger rail service. HCAOG supports efforts to plan, design, construct, operate, and maintain a trail in, or next to, the rail rights-of-way, consistent with Senate Bills 1029 and 69 (McGuire) to develop the Great Redwood Trail.
Efficient & Viable Transportation System	◆ Invest in and maintain facilities and technologies to increase the efficiency and cost-effectiveness of the region's goods movement system. ◆ Use innovative technology and practices to operate, maintain, and optimize the efficiency of the freight transportation system while reducing its environmental and community impacts. {California Freight Mobility Plan} ◆ Improve the state of good repair of the freight transportation system. {California Freight Mobility Plan} ◆ Advance EV charging and fueling infrastructure to meet Safe & Sustainable Transportation targets of *VROOM 2022-2042*. ◆ Hydrogen fuel is available for fleet vehicles, with green hydrogen fuel available as much and as soon as possible to enable intra-county and inter-county travel. **Policy GM-7. (Road/Trucking)** HCAOG supports the County's use of commercial truck weight fees and timber taxes as sources to pay for maintaining local truck routes in a state of good repair. HCAOG shall support efforts to cooperatively develop and implement equitable cost-share fee programs for the trucking industry. **Policy GM-8. Energy-Wise Freight & Transport:** HCAOG shall promote projects and programs that increase energy efficiency, conserve energy, and use alternative ("clean") energy sources to transition to a carbon-neutral transportation system and reduce the direct and indirect costs of freight and passenger transportation.
Environmental Stewardship & Climate Protection	◆ Reduce overall energy use in the goods movement system. ◆ Reduce air pollutant emissions and air quality impacts of the regional goods movement system. ◆ Invest strategically to accelerate the transition to zero- and near-zero-emission equipment powered by renewable energy sources, including investing in supportive infrastructure. (California Sustainable Freight Action Plan 2016) ◆ Reduce on-road transportation-related fossil fuel consumption in Humboldt County. **Policy GM-9. (Goods Movement)** HCAOG shall work with NCUAQMD and other stakeholders to develop and promote programs, technologies, and best practices to reduce the transportation sector's air pollutant emissions (e.g., NOx, PM, SOx, sulfate, VOC) and to decarbonize California's freight transport system. {*California Sustainable Freight Action Plan 2016}*

	Policy GM-10. (Zero Emission Vehicles): HCAOG will work with the freight industry to encourage and help accelerate the widespread transition to zero-emission technologies and infrastructure (CAPTI 2021).
Equitable & Sustainable Use of Resources	◆ Preserve harbor-related land uses that serve Humboldt Bay. **Policy GM-11. (Goods Movement)** HCAOG shall promote applying innovative and green technology, along with accompanying infrastructure and applicable practices, to optimize the efficiency of the freight transportation system. {*California Sustainable Freight Action Plan 2016}* **Policy GM-12. (Maritime)** HCAOG will assist local, regional, or state lead agencies in preserving coastal-dependent land uses as necessary for successfully operating the regional maritime transport system to meet demands for its highest and best use.
Safety & Health	◆ Reduce the regional goods movement transportation system's number of accidents, injuries, unsafe conditions, and security threats. ◆ Improve the safety, security, and resilience of the freight transportation system. {California Freight Mobility Plan} **Policy GM-13. (Goods Movement)** HCAOG shall collaborate with State, local, and Tribal agencies to help reduce and eliminate health, safety, and quality-of-life impacts on communities that are disproportionately affected by operations at major freight corridors and facilities. This includes reducing toxic hot spots from freight sources and facilities, and ensuring continued net reductions in regional freight pollution. {*California Sustainable Freight Action Plan 2016}*

NEEDS ASSESSMENT

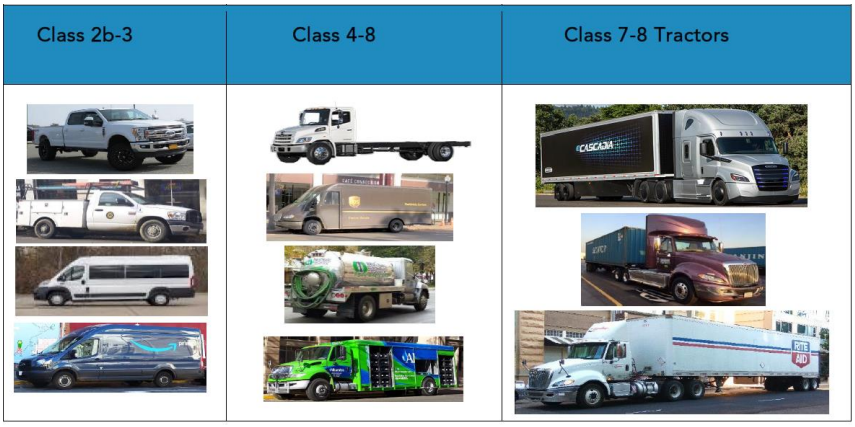
INTERMODAL TRANSPORT NEEDS

> Vision for a sustainable freight transport system
> Transporting freight reliably and efficiently by zero emission equipment everywhere feasible, and near-zero emission equipment powered by clean, low-carbon renewable fuels everywhere else.
> *– CA Sustainable Freight Action Plan 2016*

In Humboldt County, all four "legs" of intermodal freight transport (highway, maritime, aviation, rail) face common challenges. Foremost among them is that Humboldt's small population and economic base generate small markets for imports or exports, which makes it hard to pay for maintaining costly infrastructure. Each mode also suffers from deteriorating infrastructure and equipment that needs modernizing. The region's rugged terrain and remoteness add to infrastructure costs, as well as make it more expensive to transport goods in and out of Humboldt County than in and out of competing markets. Since Humboldt currently has no rail freight service, our optimal freight transport system will be based on connecting trucking, port, and aviation facilities.

The following discusses regional needs for developing a more intermodal, more efficient, and more cost-effective goods-movement system in Humboldt County.

Vehicles Subject to the Advanced Clean Trucks Regulation



Advanced Clean Trucks Regulation (CARB, February 12, 2021)

TRUCKING FLEET NEEDS

The California Air Resources Board (CARB) passed the Advanced Clean Trucks Regulation[2] with the purpose to reduce air pollution and greenhouse gas (GHG) emissions from medium- and heavy-duty on-road vehicles. CARB is enacting strategies to accelerate a large-scale transition to zero-emission vehicle fleets. The regulation requires manufacturers to sell zero-emission trucks and buses as an increasing percentage of their annual California sales from 2024 to 2035. CARB's timeline is to set regulation for medium and heavy-duty zero-emission fleets at the end of 2021.

HIGHWAY TRANSPORT NEEDS

Because the highways and local roads currently accommodate all goods movement through Humboldt County, improving the State highway system is a primary need for improving goods movement in Humboldt County.

Truck restrictions (due to terrain) on U.S. 101 make shipping by truck less competitive. This, in turn, makes the port less competitive, and in some cases makes aviation shipping less competitive, as well. The local trucking industry's competitive edge applies to the relatively small area south of Medford and Klamath Falls, Oregon, west of Redding, and north of Willits. Outside that area, truck shipping rates are generally lower to competing markets and ports (HBHCRD 2003).

State Route 299

One need for making truck and port transport more competitive is to reduce truck travel times between the Humboldt Bay Area and Redding (in Shasta County). In November, 2016, Caltrans completed an inter-regional

[2] Advanced Clean Trucks Regulation, CCR Section 1963 (June 2020). ww3.arb.ca.gov/regact/2019/act2019/fro2.pdf)

project to make the Buckhorn Grade portion of State Route 299 safer and more efficient travel for people driving passenger cars, recreational vehicles, and commercial trucks.

Caltrans widened and/or realigned 9.6 miles of SR 299 in Trinity and Shasta Counties to eliminate seven turns, realign hairpin turns, and add truck-passing lanes. Due to the reconstruction, STAA trucks (semi-trucks longer than 48 feet) can use SR 299 to connect from Interstate 5 at Redding to Highway 101 and the Port of Humboldt. The total project cost approximately $60 million; most of the funds came from Caltrans' State Highway Operation and Protection Program (SHOPP).

U.S. Highway 101

U.S. 101 is the backbone for intercity and intercounty goods movement throughout Humboldt County, as even sea cargo and air cargo rely on surface transportation via trucking. As discussed above, STAA trucks will be able to travel north-south to Humboldt when Caltrans District 1's Richardson Grove project is completed, and they will have east-west access to Interstate 5 once S.R. 299 is designated a Terminal Access route (possible now that Caltrans District 2's Buckhorn Grade is completed).

Overall, U.S. 101 within Humboldt functions well for goods movement; no segments suffer severe congestion. U.S. 101 is congested during peak travel hours in Eureka, where the highway functions as the city's main street. Due to this roadway's mixed use, freight trucks—particularly heavy timber industry trucks, can cause incompatible noise and vibration, as well as hazardous conditions for pedestrians and crossing traffic.

Environmental conditions are impacting current and future access and reliability on U.S. 101 both intra- and intercounty. U.S. 101 around Humboldt Bay is increasingly vulnerable to tidal inundation from sea-level rise and flooding, which poses potential threats to predictability and timely delivery of goods. In Del Norte County, coastal erosion and geological movement along the four-mile segment of Last Chance Grade (between Klamath and Crescent City) has caused landslides and road failures for decades. Caltrans District 1's goal is to realign the route; however, building the alternative route is estimated to take 15 years for environmental studies, permitting, and design, and another five to eight years to construct (to year 2039).

To the south, U.S. 101 in Mendocino County is subject to landslides and rockslides. The historic landslide at Confusion Hill finally compelled Caltrans to realign the highway (with two new bridges) to the other side of the South Fork Eel River (completed in 2009). Rockslides on State Route 1 and U.S. 101 can restrict surface access into/out of Humboldt County to State Routes 36 and 299. Traffic bottlenecks on 101 at Willits (Mendocino County) led Caltrans to build the Willits Bypass, which opened in November 2016.

Broadband Connectivity

Equal access to broadband is important because an increasing amount of services, such as medical appointments, can be done remotely online. Humboldt County is located within the Redwood Coast Consortia (RCCC) region, as identified in the California Regional Broadband Consortia's *Recommended Strategic Broadband Corridors* report (2019). The report identifies Highway 101 through Humboldt as a strategic broadband corridor where it would interconnect with existing fiber on the CA 36 corridor and CA 299 fiber corridor currently being implemented. Both these routes go east to interconnect with fiber on I-5. As part of its "Dig-Once" policy, Caltrans aims to install conduit in conjunction with transportation projects.

Trucking Industry Cost-Share

The heavier the vehicle, the more strain it will put on a roadway's structure. Freight trucks, loaded and unloaded, weigh more than other road vehicles; thus, they more rapidly and more severely deteriorate roadways. The heavy trucking weights and volumes in Humboldt are predominantly from timber, livestock, and quarry rock. Because truck transport is, and will continue to be, the primary method of goods movement in Humboldt County, stakeholders in the trucking industry are integral for proactively solving how to finance maintaining the region's truck routes in a state of good repair. Local jurisdictions are interested in having the trucking industry share equitably in the costs and benefits of road repair and maintenance.

Cooperative efforts are needed between the trucking industry, Humboldt County, and Caltrans to assess the impacts that trucks have on the roadway network, and to create regulatory guidelines for truck travel, including designated truck routes. Trucks should not be permitted on facilities that are not designed or constructed for heavy vehicles if there are alternatives.

Transporting heavy forest products causes the most wear and tear on the region's roadway system. Many county roads that provide access between the forest (point of harvest) and the state highway are not designed for heavy truckloads. Many existing roads and bridges require additional structural support to handle the heavy loads. The County and Cities expend significant transportation funds to repair and maintain roadways used by timber trucks. For example, the estimated cost to maintain and repair the roads used during a sustained logging operation was calculated at $9,000 per mile annually in 2002 (Humboldt County 2002); with inflation, that cost would be approximately $12,500 per mile today.

The U.S.D.A. Forest Service transfers some funds to the County from the sale of National Forest timber. The rest of the funds for road maintenance come primarily from a county road tax on property in unincorporated areas, in-lieu taxes, and traffic fines. Like jurisdictions throughout California, the County of Humboldt does not have enough funds annually to routinely maintain its roads. To make the costs and benefits of road maintenance more equitable, additional funds from increased weight fees and additional timber taxes are needed.

MARITIME TRANSPORT NEEDS

Humboldt Bay Harbor's transportation competitiveness is limited by economic and geographic conditions that do not constrain competing ports. How well the Humboldt Bay Port competes with other port facilities for marine transport depends on:

- distance to the origin/destination of the shipped commodity
- port connections to freight trucking and freight rail
- sufficient cargo volumes to spread fixed shipping costs
- adequate dockside cargo facilities

To grow its cargo handling activities, the major competitive disadvantages the Port faces are that:

- the local market is small;
- the port is far from large metropolitan markets;
- the port's connections to inland areas by truck transportation are limited ; and
- the odds are low for restoring NCRA freight rail north of Willits given the environmental constraints within Eel River Canyon in Mendocino County.

Other "port issues" are

- Economic impacts from non-indigenous species
- Navigation hazards due to sediment deposits (shoaling) from Eel River
- Shoaling, sedimentation, and deferred dredging constrain deepwater shipping
- Cargo handling facilities are in disrepair (Caltrans 2016)

The Harbor District developed the *Port of Humboldt Bay Harbor Revitalization Plan* "aimed at establishing a new and sustainable maritime focus for the community." The Plan identifies "revitalization strategies" that would fit best with market demand and the Port's competitive advantages. Under conditions with no rail, a strategy for goods movement activities is to develop coastal feeder barge service as an alternative to rail. Goods movement strategies recommended either with or without rail service are: niche bulk cargoes, forest products cargo handling, and marine-dependent industrial projects (HBHRCD 2003).

The District's Revitalization Plan recommends sites on Humboldt Bay for the following freight-related markets:

Marine Use	Recommended Sites
Bulk Aggregates/Rock	– Fields Landing Terminal (southern origin) – Simpson Samoa Pulp Mill Dock (northern origin)
Liquid Bulks	– Simpson Samoa Pulp Mill Dock – Simpson Property/Fairhaven Terminal – Chevron Dock
Coastal Lumber Barge Service	– Eureka Forest Products/Sierra Pacific (open storage) – Fairhaven Terminal (covered storage) – Redwood Docks 1 & 2
Forest Products Cargo Handling	– Eureka Forest/Sierra Pacific (chips, logs lumber) – Fairhaven Terminal (pulp, plywood, veneer) – Humboldt Bay Forest Products (logs, lumber) – Samoa-Pacific Chip Export dock (chips) – Redwood Docks 1 & 2

The *Samoa Industrial Waterfront Preliminary Transportation Access Plan* (HBHRCD 2013a) addresses needs and opportunities for the Harbor District regarding harbor-related activity on the Samoa Peninsula. The plan recommends a "Preferred Alternative Route," by which the Harbor District could optimize intermodal goods movement between the bay and land. The plan identifies seven roadways in Samoa that are substandard for serving as intermodal freight routes (i.e., Major Collector roadway status). Three of the roadways are in the County's jurisdiction:

- New Navy Base Road – Bay Street to Highway 255;
- Bay Street – New Navy Base Road to Vance Avenue; and
- Samoa Pulp Lane (aka LP Drive) – New Navy Base Road to Vance Avenue.

The other four roads are currently privately-owned:

- Vance Avenue – Bay Street to Samoa Pulp Lane;
- Vance Avenue – Samoa Pulp Lane to north spur;
- North Spur off Vance Avenue; and
- South Spur off Vance Avenue.

To implement the "Preferred Alternative Route," the plan advises the Harbor District to acquire rights-of-way or easements to the four privately-owned road segments. The plan also recommends adding the seven road segments, as well as the portion of Highway 255 from New Navy Base Road to Highway 101 in Eureka, to the National Highway System.

The 2018 Market Study mentioned earlier states that the "industries most likely to show growth in demand for land zoned for (Coastal Dependent-Industrial) property are local marine cargo, commercial fishing, mariculture, marine research, and recreational boating" (County of Humboldt, 2018).

New Navy Base Road

One additional project that will facilitate intermodal goods movement is Humboldt County's roadway project for New Navy Base Road. This project is listed in the RTP's Complete Streets Element (Table *Streets-5*, HCAOG Top Priority Regional Complete Streets Projects) and not below. The County's project is to reconstruct New Navy Base Road from State Route 255 to Bay Street. The project is long-term (implementation year is TBD), not funded, and estimated to cost $1.5 million. This project will improve harbor-truck connections for marine terminals in Samoa. The Harbor District estimates that "minor physical changes to serve marine terminals" would cost $416,000 (2017 dollars).

In early 2021, the Harbor District contracted services to develop a conceptual master plan and analyze opportunities and constraints for properties zoned coastal-dependent Industrial between the Samoa Bridge and the former pulp mill (Redwood Marine Terminal II). One of the Harbor District's long-planned goals is to develop a modern multi-purpose berth and land-based facility expand at Redwood Marine Terminal I (RMT I) on Humboldt Bay (Harbor District, Board Meeting Agenda for February 11, 2021).

AVIATION TRANSPORT NEEDS

Businesses and individuals in our region want access to dependable, convenient, and affordable air transport, both for freight and commercial passenger airline service. Expanding regional aviation service capacity would help build regional economic potential and would help maintain an important quality-of-life amenity in this rural area.

The County of Humboldt has expressed the need to expand airline services (commercial passenger and freight), for example, in the *General Plan Update* (Circulation Element Policy C-P44, and Economic Development Element Policy ED-P12, January 3, 2017) and in "Redwood Coast Targets of Opportunity 2012" (County of Humboldt, 2013). The County Board of Supervisors, in 2017, contracted Voltaire Aviation Consulting to perform an "Airport Governance and Sustainability Study." Part of the study is to recommend marketing the commercial airport. The goal is to support economic growth by "developing and sustaining a solid air transportation network that includes increased airline passenger and air cargo service, business/corporate aviation access,…and aviation-dependent industries…" (Humboldt County 2017).

The Redwood Coast Airport and Murray Field Airport move (i.e., enplane and deplane) the most tons of air cargo in the region. Murray Field is a relatively small airport that can only accommodate smaller planes, which means some air cargo volumes are moved less efficiently. If air freight facilities were expanded at the Redwood Coast Airport, larger cargo planes could potentially reduce airfreight costs through more efficient economies of scale. Expanding the airport's airfreight capacity could potentially shift some of the region's goods movement from trucking to air. For example, perishable products (e.g. aquaculture, high-value food, flowers) that are now trucked from Humboldt to the San Francisco International Airport could instead be flown out from the local airport. However, according to a feasibility study prepared for the Aviation and Airport Division of the County Public Works Department, under current conditions, expanding Redwood Coast Airport's air freight facility would not be economically practical.

ACTION PLAN: PROPOSED PROJECTS

GOODS MOVEMENT

Table *Goods-3* lists projects or improvements that HCAOG supports to help achieve the RTP's goals and objectives for the region's goods movement transportation system.

Table *Goods-3*. **Regional Goods-Movement Projects**

Lead Agency	Project Name	Short or Long Term[1]	Description	Funding Source	Implementation Year(s)	Estimated Cost ($000)
Harbor District	Port Infrastructure Development Program	LT	Establish a multipurpose, heavy-lift, publicly-owned Redwood Marine Terminal to support emerging offshore wind industry.	CA Energy Commission ($11M), Headwaters Fund, federal grants	unknown	$124,000
Harbor District	Vance Avenue – Bay Street to Samoa Pulp Lane	LT	Acquire title to property; improve to Major Collector and National Highway System (NHS) standards to serve marine terminals.	Not funded	unknown	$2,336
Harbor District	Vance Avenue – Samoa Pulp Lane to North Spur	LT	Acquire title to property; improve to Major Collector and NHS standards to serve marine terminals.	Not funded	unknown	$1,094
Harbor District	North Spur off Vance Ave	LT	Acquire title to property; improve to Major Collector and NHS standards to serve marine terminals.	Not funded	unknown	$746
Harbor District	South Spur off Vance Ave	LT	Acquire title to property; improve to Major Collector and NHS standards to serve marine terminals.	Not funded	unknown	$1,033
Harbor District	Humboldt Bay Navigation Channel Shoaling Study	LT	Project seeks to reduce shoaling in Humboldt Bay to insure year-round deep draft cargo shipping and bar safety for all users.	Not funded (50% cost share)	unknown	$3,000
Humboldt County	Bay Street – New Navy Base Road to Vance Ave	LT	Improve to Major Collector and NHS standards to serve marine terminals.	Not funded	unknown	$978
Humboldt County	Samoa Pulp Lane – New Navy Base Road to Vance Ave	LT	Improve to Major Collector and NHS standards to serve marine terminals.	Not funded	unknown	$239
Humboldt County	New Navy Base Road – State Route 255 to Bay St.	LT	Improve to NHS standards to serve marine terminals.	Not funded	unknown	$1,929
Caltrans District 1	Richardson Grove Operational Improvement Project	LT	Road widening	2011 SHOPP	unknown	$5,500
				Short-term Subtotal		$0
				Long-term Subtotal		$140,855
				Regional Projects–Funded (constrained) **Subtotal**		$ 5,500
				Regional Projects–Not funded (unconstrained) **Subtotal**		$135,355
				REGIONAL GOODS MOVEMENT PROJECTS TOTAL		**$140,855**

[1] Short-term is 0-10 years; long-term is 11-20 years. Projects with unknown implementation years are listed as long-term.

SYSTEM PERFORMANCE INDICATORS

The table below lists performance indicators for the region's aviation system. The table groups performance measures by "goal," which correspond to the RTP's six main objectives/planning priorities.

Table *Goods-4.* **Performance Indicators for Regional Goods Movement System**

GOALS	FACTORS	INDICATORS	MEASURES	DATA SOURCES
Safety	Collision rates	Do rates of freight-transportation-related collisions exceed statewide averages? Have rates of freight-transportation-related crashes, fatalities, and injuries decreased?	• Collisions per vehicle (or passenger) miles traveled. • Highway crash rates per million vehicle miles for large trucks. • Severity of collisions and injuries. • Number of safety improvement projects implemented.	Accident statistics collected by Caltrans District 1 Safety Division, CHP, local agencies.
	Airport hazards	Are airport tarmac areas and fueling facilities securely fenced? Are there secure boundaries for airport runways, taxiways, aprons?	• Area of unsecure fencing at airport perimeters, card access, gate monitoring system.	Airport Master Plans or safety reports, Caltrans Office of Aviation Planning, Division of Aeronautics.
Balanced Mode Shares (Complete Streets)	Mobility, Reliability	Have multi-modal delivery options increased in the region? Are truck drivers using available truck routes thereby decreasing modal conflicts on alternate local roads?	• Travel mode split (shares) for freight transport. •	Goods movement industry.
Efficient, Viable Transportation System	System condition, System preservation, State of good repair	Has condition of highways and major arterial roadways improved (weighted average countywide)? Do road, aviation, and maritime facilities meet standards for state of good repair?	• Pavement Condition Index (PCI) rating. • Condition of bridges, harbor and aviation facilities. • Maintenance/rehabilitation funding shortfalls.	Public Works Depts, Caltrans District 1, Harbor District, goods movement industry, StreetSaver or other pavement management software (PMS).
	Cost effectiveness of investments, Benefits to costs ratio	Are investments in RTIP projects helping achieve RTP goals? Have investments improved system efficiency and/or productivity? Are truck, harbor, aviation, or rail market shares increasing for commercial passenger/freight services?	Per one thousand dollars invested: • Decreased collisions and fatalities. • Decrease in system-operating cost. • Decrease in air pollution emissions. • Increase in annual freight tons per mile or commercial passenger miles carried.	Caltrans, California Air Resources Board (CARB), CHP, Public Works Depts, local and state environmental compliance reporting.

GOALS	FACTORS	INDICATORS	MEASURES	DATA SOURCES
Environmental Stewardship & Climate Protection (CO_2 reduction)	Fuel and energy use	Has freight-transportation fuel consumption decreased?	• Fuel consumption gallons per capita. • Ratio of fossil fuel use to freight miles traveled.	CARB, state reporting.
	Adaptability and resilience to climate change impacts	Have freight-transportation-related CO_2 emissions decreased? Has the percentage increased for ZEV freight vehicles replacing internal combustion freight vehicles?	• Total freight-related transportation CO_2 per capita and overall (countywide). • Air quality levels	CARB's EMissions FACtors model (EMFAC), environmental and compliance reporting.
Equitable & Sustainable Use of Resources	Equity, Environmental justice	Have freight transportation investments advanced environmental justice (EJ) objectives?	• Percentage of RTP/RTIP expenditures in environmental justice tracts.	
	Transportation coordinated with land use	Are land uses and development compatible for adjacent transportation facilities?	• Acres of sensitive lands and under-invested/disadvantaged communities on which freight transportation infrastructure is built. •	General Plan updates, Airport Land Use Compatibility Plan, Airport Master Plans.
Economic Vitality	Economic sustainability	Have freight transportation investments contributed to economic growth?	• Direct and indirect economic benefits from increased multi-modal options?	

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12. FINANCIAL ELEMENT



The Financial Element of an RTP is statutorily required, and is required to estimate funds available for the 20-year planning horizon. The Financial Element is meant to define realistic financing constraints and opportunities, and provide an overview of current federal, state, and local transportation funding sources. The Inventory of Transportation Funding Programs, identifies potential funding sources that may be available.

The Financial Element also includes a Finance Plan that identifies current and anticipated revenue resources available to fund the planned transportation investments that are contained in the Complete Streets Element. The Complete Streets Project Table (Table Streets- 4) lists projects with a funding source has been secured; these are considered financially constrained projects. The table also identifies projects with no funding source identified; these are considered financially unconstrained projects that would be ideal to complete if funding were available. Revenues are compared to estimated costs. This shows, to the best of our knowledge, potential (and known) funding shortfalls.

FEDERAL TRANSPORTATION FUNDING

The federal government's surface transportation programs are financed mostly through the Highway Trust Fund. The trust fund sets up two separate accounts, one for highways and one for mass transit. The trust fund derives its revenues mostly from federal tax on gasoline, diesel, and certain other motor fuels, plus interest earned on its accumulated balances. The taxes are levied on a cents-per-gallon basis and are not indexed to inflation. As a result, "since the mid-1990s, inflation has eroded the purchasing power of federal transportation funds by nearly 40 percent" (US DOT 2017). Along with inflation, other reasons for the decline in funding are: Congress has not increased federal fuel taxes per gallon since 1993; and per capita vehicle miles traveled (VMT) have been decreasing since 2005 along with increasing fuel economy of passenger vehicle (on average by 12 percent), thereby reducing fuel use and thus fuel tax revenues (US DOT 2017).

While gas tax revenues have decreased, successive congresses (and Presidents) have authorized greater spending on highways and mass transit through federal transportation bills. The transportation bills of the last three decades, and their overall funding authorizations, were:

- ☐ 1991-1997 Intermodal Surface Transportation Efficiency Act (ISTEA), $147 billion.
- ☐ 1998 -2004 Transportation Equity Act for the 21st Century (TEA-21), $218 billion.
- ☐ 2005-2011 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), $286.4 billion.

- ☐ 2009-2010 American Recovery and Reinvestment Act of 2009 (ARRA) included $46.7 billion for surface transportation spending. Passed in direct response to the Great Recession economic crisis.
- ☐ 2013-2014 Moving Ahead for Progress in the 21st Century (MAP-21), $109 billion..
- ☐ 2016-2020 Fixing America's Surface Transportation Act (FAST Act), $305 billion.
- ☐ 2021-2026 Investing in a New Vision for the Environment and Surface Transportation in America Act (INVEST Act), $547 billion (pending congressional and executive approval)

Since 2001, outlays from the Trust Fund have generally exceeded revenues on an annual basis. Under current law, the trust fund cannot incur negative balances, nor is it permitted to borrow to cover unmet obligations presented to the fund (CBO 2016). To make up for revenue shortfalls, Congress has, since 2008, transferred money from the Treasury's general fund to the Highway Trust Fund. Rather than raise fuel tax rates or reduce spending, Congress has avoided creating any new, ongoing revenue to deposit into the fund, opting instead to supplement federal transportation funding on an ad-hoc basis, primarily from the general fund.

SOLVENCY OF THE FEDERAL HIGHWAY TRUST FUND

The FAST Act authorized surface transportation programs through 2020. Congress enacted a one-year extension of the FAST Act through September 30, 2021, as part of the Continuing Appropriations Act, 2021 and Other Extensions Act (P.L. 116-159). The average of $12.2 billion per year authorized for the federal public transportation program in the FAST Act represented about a 14% increase (unadjusted for inflation) from the previous authorization, the Moving Ahead for Progress in the 21st Century Act. However, over the five-year period that begins in FY 2022, the gap between revenues and outlays in the mass transit fund is expected to total $25.6 billion, an average of $5.1 billion annually. (CBO 2021).

The graphs below show the Congressional Budget Office's (CBO) projected balances for the federal highway account and transit account.

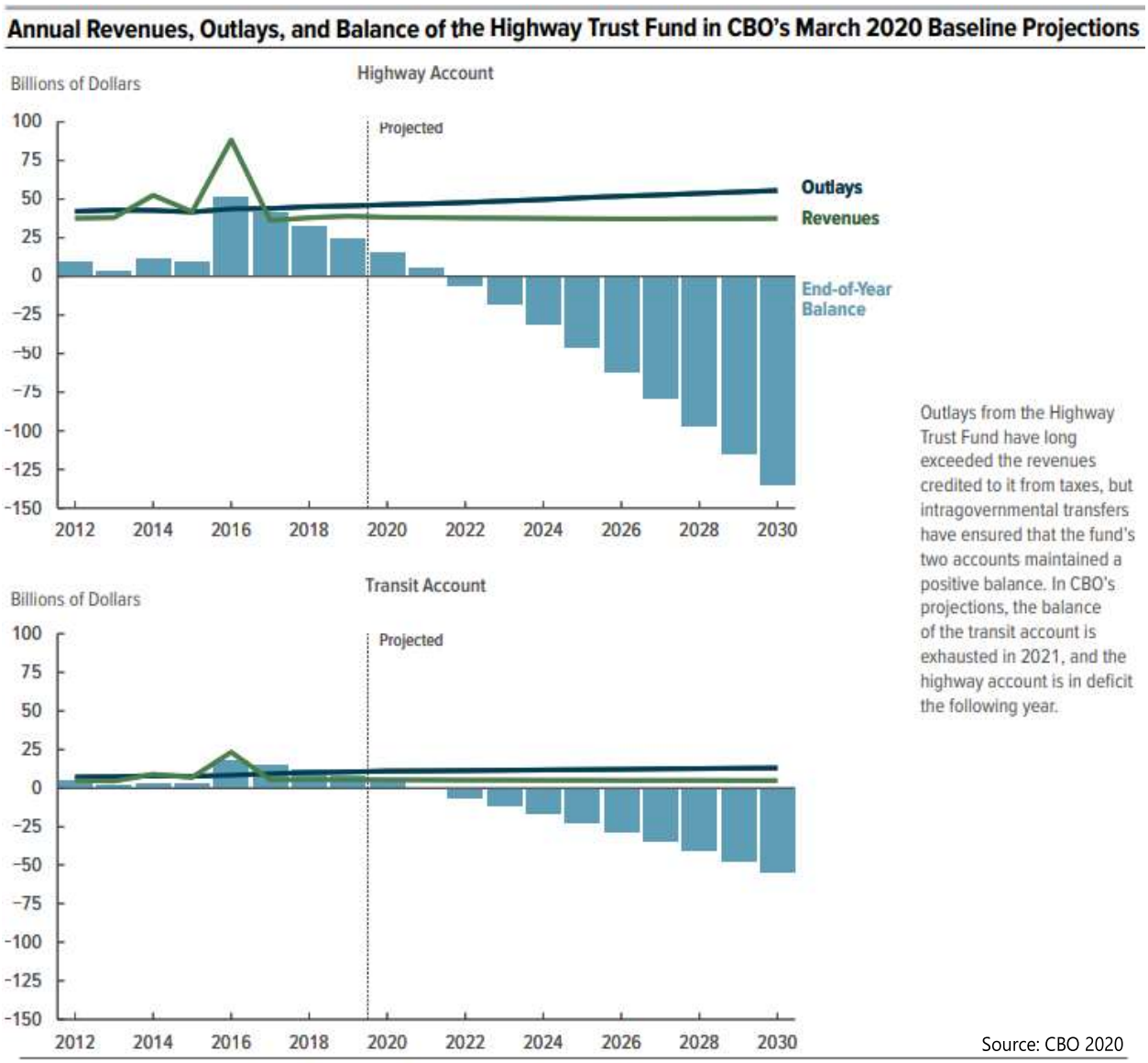


Figure *Finance*-1 **Federal Highway Trust Fund Baseline Projections, March 2020 (Congressional Budget Office)**

STATE OF CALIFORNIA TRANSPORTATION FUNDING

By most accounts, transportation funding in California has been deficient for decades, leading agencies at all levels to defer maintenance on infrastructure and fall behind on meeting transportation system and transit demands. Funding derived from user fees and fuel excise taxes was chronically declining as a result of reduced fuel consumption, limited federal funding resulting from the federal excise tax, and funding being redirected to other State programs.

ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017 (STATE SENATE BILL 1)

In 2017, the California legislature and Governor Jerry Brown approved a major funding agreement reflected in Senate Bill 1 (Beall), the Road Repair and Accountability Act. A constitutional amendment (ACA 12, Frazier) protects the funds from being diverted or used for other purposes.

California's Road Repair and Accountability Act is "the first significant, stable, and ongoing increase in state transportation funding in more than two decades" (CTC 2017). The Act provides for $5.2 billion annually, for ten years, to be deposited into the newly created Road Maintenance and Rehabilitation Account (RMRA). The Act reforms some program administration, as summarized in the following:

- Increased authority of the California Transportation Commission (CTC) to oversee the SHOPP (State Highway Operation and Protection Program);
- Requires local agencies to be transparent about what projects they fund with new revenues;
- Creates the Independent Office of Audits and Investigations at Caltrans;
- Creates an Advanced Mitigation Program for transportation projects;
- Required Caltrans to update the *Highway Design Manual* to include "complete streets" design concept;
- Requires Caltrans to double the dollar value of its contracts awarded to small businesses; and
- Requires Caltrans to implement efficiency measures with the goal to generate at least $100 million annually in savings (League of California Cities, 2017).

The statewide revenues generated by SB1 fund existing programs and newly created programs:

- **Active Transportation Program** (ATP) is augmented by $100 million annually.
- **State-Local Partnership Program** (SLPP): Receives $200 million annually, for ten years, for existing and aspiring "self-help" jurisdictions (i.e. counties that have voter-approved supplemental taxes for transportation or that have imposed fees, including uniform developer fees). The funds are to provide "for a wide variety of capital projects that are typically funded in local or regional voter-approved expenditure plans and that provide mobility, accessibility, system connectivity, safety, or air quality benefits" (Government Code Section 8879.66(2)]. Funds are divided into 50% for a competitive program (for construction projects only) and 50% for a formulaic program based on population. In 2016, Humboldt County failed to pass Measure U, a sales tax measure that would have provided up to $10 million annually in revenues for transportation infrastructure. Because it did not pass, Humboldt is not considered a "self-help" county.
- **Local Transportation Planning Grants:** $25 million for regional multimodal transportation and land use planning projects which support regional sustainable community strategies and greenhouse gas reduction targets. The Sustainable Transportation Planning Grant Program is allocated by Caltrans.
- **State Highway Operation & Protection Program:** Receives approximately $1.9 billion for SHOPP and Caltrans maintaining the state highway system.
- **State Transportation Improvement Program (STIP):** Stabilizes funds and restores $1.5 billion annually for capital projects and state highway system improvements. A portion of STIP funding is

made available to regions. Regions decide on how to allocate their portion of the funds through the Regional Transportation Improvement Program (RTIP). All projects included in the RTIP must be consistent with the RTP.

- **Local Streets & Roads** will have a continuous appropriation of $1.5 billion annually for maintenance, rehabilitation and critical safety projects.
- **Solutions for Congested Corridors Program** will have $250 million annually to reduce congestion in highly congested commute corridors. Projects may include improving state highways, local streets and roads, transit, bicycle and pedestrian facilities, and protecting local habitat or open space. Projects may be nominated by the State or regional or county transportation agencies.
- **Trade Corridor Enhancement Account** will have $300 million annually to fund freight, trade corridor, and goods movement projects nominated by local agencies and the State.

In addition, SB1 funding will be allocated for

- Bridges and culverts – $400 million
- Public transportation – $750 million
- Transit and intercity rail – $27.5 million annually
- Freeway service patrol – $25 million
- CSU and UC – $7 million for transportation research and workforce training

Table *Finance -1* describes local level SB 1 projected revenue starting in FY 2021-22

Table *Finance -1*: **SB1 Funding Estimates for Humboldt County**

Fiscal Year	Projected Revenue
2021-22	$5,050,000
2022-23	$5,200,000
2023-24	$5,340,000
2024-25	$5,510,000
2025-26	$5,680,000
2026-27	$5,860,000

Source: California State Association of Counties (CSAC 2017)

LOCAL TRANSPORTATION FUNDING

Jurisdictions that have a local source of revenue for transportation projects will be able to better predict and budget funding for maintenance, operations, and new infrastructure. The local revenue can also serve as matching funds that are required for many grant funds. State and federal funds are not always as predictable.

Several jurisdictions in California have opted for sales tax initiatives to help their governments become more self-reliant. Cities and counties may add a local sales tax within their jurisdictions if voters approve it by a two-thirds supermajority. Counties that pass such measures are referred to as "Self-Help Counties;" there is much encouragement at the State level for counties to secure this local source of transportation funding. Table *Finance*-2 lists Humboldt jurisdictions that have been successful in passing sales tax initiatives.

Table *Finance*-2 **Sales Tax Initiatives in Humboldt County**

Jurisdiction	Initiative	Tax Rate & Use	Annual Revenue
City of Arcata	Measure G approved in 2008 for 20 years.	¾ percent retail transactions and use tax funding public works and public safety services.	$1.5 million
	Measure A approved November 2020	$37 property tax to fund trails, including Annie & Mary trail	$175,000
City of Eureka	Measure O approved in November 2010.	½ percent retail transactions and use tax for five years.	
	Measure Q sales tax extension approved in November 2014.	Continue a ½ percent general sales tax for five years beginning on July 1, 2016.	
	Measure H (passed 66%) approved November 2020	Continue sales tax, raising rate to 1.25 percent, no sunset date	$9.6 million
City of Fortuna	Measure E general tax approved November 2016.	¾ percent sales tax for 8 years, for essential City services including repairing aging/ deteriorating streets	
	Measure G passed in November 2020	Continue ¾ percent sales tax for an additional 8 years	$1.4 million
City of Trinidad	Measure E	Continue ¾ percent sales tax for four years starting April 1, 2021	$100,000
Humboldt County	Measure Z (Public Safety/Essential Services Measure) approved in November 2014.	½ percent general sales tax for five years beginning on April 1, 2015.	
	Renewed in 2018 with no sunset		$10.76 million FY 2020; $1.22 million to Public Works

INVENTORY OF TRANSPORTATION FUNDING PROGRAMS

The table below indexes the transportation funding programs potentially available to HCAOG, local jurisdictions, Caltrans, transit operators, and/or tribes.

Table *Finance-3.* **Federal and State Transportation Funding Programs**

Program	Abbreviation	Eligible Modes/Purposes
Active Transportation Program	ATP	Active modes, to increase safety & mobility, and decrease greenhouse gas emissions. including for recreational trails and Safe Routes to School programs.
California Aid to Airports Program and the Airport Loan Program	CAAP, ALP	Aviation, publicly-owned, public-use airports
California Office of Traffic Safety Grants	OTS	Pedestrian & bicycle
California Streets and Highways Code §887.8(b) & §888.4	n/a	Non-motorized facilities
Caltrans' Division of Aeronautics Grants & Loans	n/a	Aviation

Program	Abbreviation	Eligible Modes/Purposes
Caltrans Transportation Planning Grant Programs (i.e. Sustainable Communities Competitive and Technical Grants)	n/a	Community-based, environmental justice, partnership, and transit planning
Emergency Relief for Federally-Owned Roads	ERFO	Tribal and Federal lands transportation facilities, public roads on Federal lands
Emergency Relief Program for Federal-aid Highways	ER	Highway, roads, tribal transportation
Federal Airport Improvement Program	FAIP	Aviation
Federal Lands Access Program	FLAP	Highway
Federal Transit Administration (FTA) Section 5304	5304	Multimodal transportation planning
FTA Section 5310	5310	Transit, para-transit and senior transit
FTA Section 5311	5311	Rural transit
FTA Section 5311(b)(2)(3) Rural Transit Assistance Program	RTAP	Transit support services, training, technical assistance, research
Highway Safety Improvement Program	HSIP	Streets (local), highway, roads, pedestrian & bicycle, Safe Routes to School, and safety infrastructure
Interregional Transportation Improvement Program	ITIP	State highways, intercity rail, and transportation enhancements
Local Streets & Roads Funding Program (created under SB1)	LSR	Maintenance and rehabilitation
Mello-Roos Community Facilities Act of 1982-Community Facilities District	Mello-Roos	Roads, pedestrian & bicycle
National Highway Freight Program	NHFP	Includes funding for federal aid highway system bridges not on the NHS. The FAST Act's National Multimodal Freight Policy includes a goal to improve movement of goods traveling between rural areas and population centers, and across rural areas between population centers
National Highway Performance Program	NHPP	Federal aid highway system bridges not on the NHS, and administrative and subsidy costs for Transportation Infrastructure Finance and Innovation Act (TIFIA) projects
Rebuilding American Infrastructure with Sustainability and Equity	RAISE	National infrastructure competitive grants to fund projects that have a significant local or regional impact
Recreational Trails Program Set-Aside from STGB Program	RTP	Trails and trail-related facilities
Regional Transportation Improvement Program	RTIP	Highway, roads, transit, pedestrian & bicycle
Rural Planning Assistance	RPA	State transportation planning
State Gas Taxes		Roads (including maintenance)
State Highway Operations and Protection Program	SHOPP	Highway, roads, pedestrian & bicycle
State Highway-Railroad Grade Separation Program	SHRGSP	Highway, road
State Planning and Research	SPR	Transportation planning mandated by federal and state law
State Transportation Improvement Program	STIP	Highway, roads, transit, pedestrian & bicycle
Surface Transportation Block Grant	STBG	Highway, roads, bridge, pedestrian & bicycle, transit, environmental mitigation, local streets
Trade Corridors Enhancement Account (created under SB1)	TCEA	Incorporates SB1 funding and federal freight funding into a single program. Federally designated Trade Corridors of National and Regional Significance, Primary Freight Network,

Program	Abbreviation	Eligible Modes/Purposes
		and other corridors with high volumes of freight movement.
Transportation Alternatives Set-Aside from STBG Program	TA	Pedestrian & bicycle, recreational trails, transit, environmental mitigation, Safe Routes to School, landscaping
Transportation Development Act of 1971	TDA	Highway, roads, transit, pedestrian & bicycle
Transportation Infrastructure Finance and Innovation Act	TIFIA	Surface transportation infrastructure improvements.
Transit and Intercity Rail Capital Program	TIRCP	Capital improvement for intercity travel
Tribal Transportation Program	TTP	Road, bridge, transit, transportation planning
U.S. Forest Service	USFS	Roads

ADDITIONAL POTENTIAL FUNDING SOURCES

HCAOG acknowledges the considerable challenges associated with financing transportation investments. HCAOG recognizes the importance of finding new and innovative ways to pay for improving the regional transportation system, including the expanding backlog of maintenance on existing facilities. The following local funding sources may potentially be considered in Humboldt County.

LOCAL SALES TAX (RETAIL TRANSACTIONS USE TAX)

Local sales taxes provide a reliable and stable funding stream; in California, these taxes outstrip state and federal funding on an annual basis. Twenty California county transportation agencies have successfully proposed and passed sales tax initiatives, which have been instrumental in providing accessible, safe, innovative and cutting-edge transportation solutions in their regions. The voters in those counties approved, by super-majorities, increasing their own local sales tax rates, typically by ½ cent (0.5%), in order to fund transportation programs for transit, highways, freight, bicycles, and pedestrians. Combined, these counties pump $3 to $4 billion each year into California's transportation infrastructure, creating jobs, maintaining existing roadways, expanding mobility, and enhancing local facilities and the environment. Although the County's attempt to pass Measure U failed, it may be worth exploring again considering the revenue that could be generated (up to $10 million annually) for local projects and the added benefit of being considered a self help county under SB1.

NEW DEVELOPMENT/TRAFFIC MITIGATION FEES

Traffic mitigation fees are one-time charges on new development. The fees pay for providing public facilities to the new development, and for mitigating impacts created by the development. Setting up a traffic mitigation fee requires a formal process and findings under the Mitigation Fee Act. The fees must be clearly related to the costs incurred as a result of the development (AB 1600). Fees cannot be used to correct

existing problems or pay for improvements needed for existing development. Although setting up mitigation fees can be controversial, they can also be beneficial for developers. In the absence of a traffic mitigation fee, each developer must pay to complete their own technical studies and must negotiate mitigation during the discretionary permit process. A mitigation fee creates certainty on how much any particular development will need to contribute and developers can factor that known amount into their financial assumptions for the project.

PUBLIC-PRIVATE PARTNERSHIPS

A public-private partnership (PPP or P3) represents a broad category of financing mechanisms that are being used to harness private sector investments. PPPs have been used with mixed success in several states nationwide. The State of California has enacted legislation to permit PPP approaches for transportation infrastructure development. Both Caltrans and the Federal Highway Administration are encouraging these types of partnerships. Early involvement of the private sector can bring creativity, efficiency, and capital to address complex transportation problems facing State and local governments (FHWA 2021).

METERED PARKING PROGRAMS

Metered parking programs can be used to generate revenue for local jurisdictions and are best suited when the revenue generated is invested back into the immediate area from where the parking fees are collected.

FINANCE PLAN

The following summarizes anticipated costs and revenues for the HCAOG region (projected for 20 years), and assumptions made to calculate these forecasts.

FINANCIAL ASSUMPTIONS

- **Future Funds Constant:** For the purposes of providing future projections, it is generally assumed that federal, state, and regional funding programs and levels will remain constant at current funding levels over the 20-year horizon (i.e., flat except for inflation). This is done to make it possible to create a projection, however nearly all funding sources experience volatility year to year, making it extremely difficult to accurately predict revenues over a 20-year planning horizon.
- **Inflation Rate:** The 20-year projected costs assume an annual inflation rate of 2%, based on the Consumer Price Index (U.S. Bureau of Labor Statistics 2021). The average inflation rate in the U.S. for the last five years, 2016-2020, was 1.9 percent. The approximate average for the last 20 years (2001-2021) was 2.0%. Inflation has fluctuated dramatically due to the Coronavirus pandemic, increasing to 4.2% from April 2020 to April 2021. The pandemic has presented an anomaly and conditions are unpredictable. To counter this we assume costs will increase, on average, two percent (2%) annually, consistent with the 20 year average.

The following summarizes the principal sources anticipated to be available for HCAOG's RTP projects for the 20-year planning period[1].

It is important to note that there are different funding sources for different project types and funds are not interchangeable.

COMPLETE STREETS FINANCING (HIGHWAY, ROADS, PEDESTRIAN, BICYCLE)

Assumptions:

- **Highway Safety Improvement Program (HSIP) Funding:** In the last four HSIP Cycles the amount of federal funding devoted to projects in Humboldt County has varied. The low occurred in Cycle 7 (2015) with just $227,000allocated to Humboldt projects. The high was in Cycle 10 (2021) when $4,186,250 was allocated to Humboldt projects. Cycle 8 (2016) and Cycle 9 (2018) brought in $2,441,210 and $1,327,260, respectively. This funding source is unpredictable. It is difficult to know what Cycle 11 and future cycles will make available to the Humboldt region. To provide an estimate we assume $2,000,000 annually.
- **Regional Transportation Improvement Program (RTIP) Funding:** The RTIP funding forecasts is based on Humboldt County's share in the draft 2022 STIP Fund Estimate (June 2022), which indicates that Humboldt has an unprogrammed balance of $482,000 and total shares of $4,478,000 through FY 2026-2027. STIP cycles can vary significantly and in some STIP cycles no funding is available. For consistency and for the sake of being able to make a projection we assume $895,600 annually. We do not include the unprogrammed balance in future projections.
- **Interregional Transportation Improvement Program (ITIP) Funding:** The US 101-Eureka/ Arcata Corridor Improvement Project has been primarily funded as a partnership between HCAOG (STIP funds) and Caltrans ITIP funding. ITIP funds are $45,057,000 for this project. These are the only ITIP funds we assume for the RTP's 20-year finance plan, we included them in the short-term projections, without adjusting for inflation.
- **Active Transportation Program (ATP) Funding:** There is no sure way to predict how much ATP funding jurisdictions will apply for, much less how much they will be awarded. Traditionally, local jurisdictions have had good success with this program, with more than $31 million awarded for projects since the program's inception in 2013. However, at this point the program is severely oversubscribed and it is getting more difficult to compete successfully for funding. Based on how competitive the funds are, and the uncertainty of which jurisdictions would apply and be awarded, HCAOG does not make assumptions of funding beyond the project that was awarded in Cycle 5, which was the City of Arcata's Annie and Mary Trail Connectivity Project (awarded $4,220,000).
- **Regional Surface Transportation Block Grant (RSTBG) / Regional Surface Transportation Program (RSTP) Funding:** From 2016 to present the annual average RSTBG distribution was approximately $1,300,000. For the short and long-term forecast, HCAOG assumes an average of $1,300,000 annually, with 2% inflation.

[1] Potential funding sources for bicycle and pedestrian projects are also listed in these three HCAOG documents: *Humboldt County Regional Pedestrian Plan* (2008), *Humboldt County Regional Trails Master Plan* (2010), and *Humboldt Regional Bicycle Plan* (2018).

- **Local Transportation Fund (LTF) Non-Transit Monies:** Of HCAOG's share of the Local Transportation Fund (from Transit Development Act monies), HCAOG has set aside an average of approximately $95,500 for pedestrian and bicycle projects (starting FY 2013-14). After higher priority expenditures, approximately $372,000 has been available annually for spending on roads. HCAOG estimates that the sum of these two averages, $467,500, will be the average annual LTF non-transit monies.
- **Gas Tax Subventions:** The State of California returns a portion of the statewide gas tax revenues to each jurisdiction for the purpose of maintaining roadways. The state deposits these revenues in the Highway Users Tax Account (HUTA) and, beginning in 2017, in the Road Maintenance and Rehabilitation Account (RMRA) in accordance with Senate Bill 1 (Beall, 2017). HUTA monies can be spent on research, planning, construction, improvements, maintenance, and operation of public streets and highways, including mass transit and environmental impact mitigation (per Streets and Highways Code §2101). to the state distributes RMRA funds to cities and counties through the Local Streets and Roads (LSR) program. Gas Tax revenues are expected to decline in future years as more and more vehicles on the road will be electric. The state and federal government are exploring alternative taxation schemes to make up for the lost revenue. HCAOG will assume HUTA funding at $5,000,000 for the first 5 years of short-term projects and after that $4,000,000 annually from years six through 20. RMRA revenues are taken from the state's provided projections for the next 5 years and extrapolated out for years six through20.
- **State Highway Operations and Protection Program (SHOPP) Funding:** In the current 10-year SHOPP book (2019/20- 2028/29) over a billion dollars are to be spent on 61 projects in Humboldt County. This amount, which is higher than usual, is partly due to the infusion of SB1 funds to the SHOPP program. There is an ambitious plan to complete major upgrades on the State Highway system by 2027. After 2027 SHOPP funding may decline. SHOPP funded projects will only occur on the State Highway system. SHOPP funding for local jurisdictions' projects are included in the Complete Streets Project Table (Table *Streets*-4) and Caltrans District 1 SHOPP projects are in Appendix E; however, they are not included in the revenue or project-costs table in this section.
- **Grant Funds:** HCAOG and individual member agencies and Tribes will apply for various grant programs to finance all types of transportation projects, from planning to construction and education. HCAOG has no solid basis for estimating the amount of grant funds the region will receive. Therefore, we do not hazard a guess, but do note that grant funds will surely supplement other transportation funds in the next five to 20 years.
- **Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) Funding:** In 2021 additional one-time funding became available for through the Coronavirus Response and Relief Supplemental Appropriations Act. The funding available at the regional level primarily flowed through existing formula-based programs such as the State Transportation Improvement Program and Regional Surface Transportation Block Grant (RSTBG) and the STIP. The CRRSAA funding is captured in the short-term revenue assumptions within the programs that were augmented.
- **New and Augmented Federal and State Funding Sources:** New funding sources, new grant programs and augmentations to existing programs are anticipated in the near term. An example of a new grant program is Clean California, which has a competitive component available to regional and local governments for litter abatement and beautification projects. Through the federal Infrastructure Investment and Jobs Act, signed into law November 15, 2021, additional funding is expected to be available at the State and regional levels. This will likely result in augmentations to the STIP and other programs, as well as new programs such as increased resources to buildout the electric vehicle charging network. These programs are still being developed and funding has not been estimated in the revenue projections.

Table *Finance-4* shows the projected revenues available for short- and long-term complete streets projects. The revenues have been adjusted for inflation except where noted.

Table Finance-4 **Projected Revenue**

Revenue Program	Short Term Revenue (Years 1-5) ($000)	Long Term Revenue (Total For Years 6-20) ($000)
HSIP	10,400	38,186
ITIP[1]	45,000	0
RTIP	6,000	17,089
ATP[1]	4,220	0
RSTBG	6,756	24,821
LTF (roads, 2% bike and ped)	2,430	8,917
Gas Tax Subventions:		
HUTA	26,020	76,373
RMRA (SB1)[2]	26,780	110,098
Local Sources[3]	69,725	216,919
Total Revenue	**197,331**	**403,390**

[1] These amounts have not been adjusted for inflation because they are distinct one-time awards.
[2]The short-term projection is using annual projections provided by the California Transportation Commission. Long-term projections were created by following the same growth rate CTC provided for the short-term and extrapolating that out for years six through 20.
[3] Local sources projections are from Table Finance-2.

Table *Finance-5* shows the short- and long-term (funded and unfunded) projects and demonstrates the massive gap in available funding and projected costs.

Table *Finance-5* **Financial Projects for HCAOG Regional Complete Streets Projects**

	Short Term Projects (Years 1-5)	Long Term Projects (Years 6-20)
	($000)	
Cost	249,099	434,763
Revenue	121,505	316,925
Difference	**-127,594**	**-117,838**

The revenue and cost estimates are simple projections over 20 years, increased by 2% annual inflation. The value in this exercise is less as a definitive calculation than as an indicator of a significant funding shortfall. Estimated revenues for the next 20 years equal 64% of the funding needed to meet currently known needs. In the short term, the shortfall is more extreme with estimated revenues equaling only 48% of projected costs.

In addition to the underfunded project costs, there are extensive maintenance backlogs throughout the region. Based on the collective Pavement Management Plan Reports prepared in 2017 (most recent available)

there is over $516 million in deferred maintenance that is needed to bring the entirety of the road system up to an acceptable condition.

PUBLIC TRANSPORTATION FINANCING

Acquiring funds continues to be a significant constraint for providing more public transportation services in Humboldt County.

Revenues from transit operations include, as applicable: fares, advertising, State Local Transportation Fund (TDA), State Transit Assistance Fund (STA), Federal Transit Administration Funds, rents/leases, interest income, carryover, City General Fund (Eureka Transit Service only), Humboldt State University transit user revenues, tribal contributions, advertising revenue, and other transit sources. Capital revenues include, as applicable: State Prop 1B (PTMISEA), State Transit Assistance Fund, State Local Transportation Fund, Federal-FTA 5310, 5311, 5311(f), and Federal Tribal Grants (Blue Lake Rancheria Transit Service and Yurok Tribe).

Assumptions:

- **Revenues & Costs:** For operations and capital, revenues and costs are assumed to stay flat in constant dollars, but increase by a 2% annual inflation cost, based on the national average for the past 20 years, per the US Bureau of Labor Statistics (2021).
- **TDA Allocation:** TDA revenues will continue to be allocated per the current formula.
- **STA Fund (TDA funds):** Based on an average of the previous five years (FY 16/17-FY 20/21), local transit operators received a total of $1,200,000 in TDA funds annually. HCAOG assumes that average for forecasting 20 years of STA revenues.
- **LTF Transit Monies (TDA funds):** In fiscal year 2015-16, the County and Cities spent $4,518,000 in LTF monies for transit operations. HCAOG assumes this amount for future annual funds.
- **FTA 5310:** FTA 5310 revenues are awarded by a competitive grant process. Generally, in Humboldt, at least one transit operator a year is awarded a grant to purchase a vehicle. Based on federal funds awarded in the past, HCAOG assumes that Humboldt will receive an average of $300,000 annually (plus inflation) over 20 years.
- **FTA 5311:** HCAOG's program of projects for FTA 5311 funds totaled $815,000 in 2021. Over the five-year period from FY 16/17 to FY 20/21, the average funding allocation was $1,030,000. HCAOG conservatively forecasts future annual revenues to be $815,000.

Public Transit Financial Projections

The Humboldt County 2017-2022*Transit Development Plan* includes a short-term financial plan for each of Humboldt County's major local transit providers (i.e., Humboldt Transit Authority (HTA), Eureka Transit Service (ETS), Arcata and Mad River Transit Service (A&MRTS), Fortuna Transit Service (FTS), and Blue Lake Ranchera Transit Service (BLRTS), ~~,~~and covers fiscal years 2017 to 2022. The financial plans include five-year operating budgets and capital plans. Table *Finance-6* summarizes 20-year financial projections for public transit. Table *Finance-7* projects federal and state funding revenues.

Table *Finance-6.* **Transit System Financial Projections**[1]

Transit System	Revenues FY 2019-20 ($000s)	Revenues, 20-Year Projection ($000s)	Annual Costs FY 2019-20 ($000s)	Costs, 20-Year Projection ($000s)
HTA	$6,945	$168,750	$9,415	$228,760
A&MRTS	$1,031	$25,050	$802	$19,500
FTS	$306	$7,435	$177	$3,200
BLRTS	$69	$1,675	$65	$1,580
System Total (rounded)	**$8,351**	**$202,910**	**$10,459**	**$253,040**

[1] Simple 20-year projections with 2% annual inflation rate. Revenues and costs include operations and capital.
Source: "FY 2019-20 Fiscal and Compliance Reports," HCAOG 2021

Table *Finance-7.* **Projected 20-Year Transit Program Revenues**

Program Source	Forecasted Annual ($000s)	Forecasted 20 Years* ($000s)
FTA 5310	$300	$7,300
FTA 5311	$815	$19,800
LTF (Transit funds)	$4,518	$109,800
STA Fund	$1,200	$29,150
SB1 (RRAA)	$800	$19,400
Total	**$6,958**	**$169,100**

*Assumes 2% annual inflation.

GOODS MOVEMENT FINANCING

The financial plans and funding sources for surface transportation projects related to the implementation of truck-related freight/goods movement and development of intermodal facilities are covered in large degree by the financial plans for the Complete Streets Element. Financing for the rail system is not presented as the system is currently not operating and is not projected to operate within the 20 year planning horizon of this RTP.

Maritime

The Humboldt Bay Harbor Recreation and Conservation District (Harbor District) manages public financing for maritime good movement on Humboldt Bay. The Harbor District's principal sources of income include Humboldt County property taxes, tideland leases from dock operators and mariculture operations, rents and leases from commercial sources, and the Harbor Improvement Surcharge (levied on cargo and deep draft vessels using Humboldt Bay's maintained navigation channels). The Harbor District also utilizes grant funding from various sources.

The Harbor District budget for FY 2021/22 includes $5.58 million in net revenue. After operating expenses, capital expenses and debt payment, the year's total budget balance is $1.28 million. The Harbor District submitted a $56 million grant application under the Port Infrastructure Development program to develop a $145 million new heavy lift terminal at Redwood Marine Terminal 1. The grant was matched with an $11

million budget appropriation from the State of California. The purpose of the new terminal project is to prepare for anticipated offshore wind development.

AVIATION FINANCING

There are few funding sources available to Humboldt County for financing the projects identified in the Aviation Element. It is difficult to assess anticipated revenue streams because funding priorities shift regularly.

Airports not included in the National Plan of Integrated Airport Systems (NPIAS) are ineligible for FAA Airport Improvement Program funds under existing legislation; however, they may be eligible for State grants, which require a minimum 10% local match. Caltrans' Division of Aeronautics provides aviation funding to public agencies for airport safety, maintenance, and capital improvements through California Aid to Airports Program (CAAP) grants and the Airport Loan Program (ALP). The Division's operations and grants are funded from the Aeronautics Account and not the State Highway Account. The Aeronautics Account is funded from excise tax revenues that are collected on General Aviation non-commercial jet fuel and aviation gasoline (Caltrans 2016a).

The County of Humboldt does not allocate any of its general funds to support the six airports owned by the County. Thus, the Aviation Division of Public Works relies on grant funds, airport-generated income, and retained earnings in order to be self-supporting. The Redwood Coast Airport collects some revenues from the passenger facility charge, which is a $4.50 fee added to each roundtrip airfare at the airport.

Airports such as Kneeland Airport are primarily supported by Aviation Division revenue and various federal and state funding programs. Kneeland Airport's limited revenue-generated income comes from non-aviation sources such as providing a favored backdrop for companies filming car commercials.

Assumptions:

- Both Murray Airport and the Shelter Cove Airport receive a $10,000 annual grant from the State of California Annual Grant program. It is anticipated that they will continue to receive this annual grant for the RTP's 20-year planning horizon.

ACTION PLAN: PROPOSED PROJECT:

Agency	Project Description	Funding Source	ST or LT*
HCAOG, TAC	**Funding Consistency Analysis:** HCAOG staff will prepare a report for review by the TAC and the Board on the history of projects funded with HCAOG discretionary funding sources and the project benefits achieved in relation to RTP priorities including fix-it-first and the Safe and Sustainable Transportation Targets. HCAOG will track annually the benefits of the projects in relation to RTP priorities. Based on the results of this tracking, staff will work with the TAC and Board to explore if and how a ratings program for projects would be beneficial in meeting RTP priorities.	RPA, LTF, grants	ST

*Short-term (ST) is one to 10 years, long-term (LT) is 10+ to 20 years

REFERENCES

CITATIONS

CBO 2016 (Congressional Budget Office) Letter to Honorable Jim Inhofe, Chairman, Committee on Environment and Public Works United States Senate, "Re: Estimates of the status of the Highway Trust Fund based on CBO's August 2016 baseline" from Keith Hall, Director, Congressional Budget Office, dated September 9, 2016.

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OREGON

SISKIYOU COUNTY

SHASTA COUNTY

TRINITY COUNTY

TEHAMA COUNTY

DEL NORTE COUNTY

HUMBOLDT COUNTY

MENDOCINO COUNTY

Pacific Ocean

Crescent City

Orick

Trinidad

Eureka

Arcata

Blue Lake

Fortuna

Ferndale

Rio Dell

Garberville

Shelter Cove

Willow Creek

Weitchpec

Orleans

Redding

Big Lagoon Rancheria

Trinidad Rancheria

Blue Lake Rancheria

Table Bluff Reservation

Bear River Band of the Rohnerville Rancheria

Yurok Reservation

Karuk Tribe

Hoopa Valley Reservation

101

199

96

299

36

5

0 5 10 Miles

Figure 2.1
Humboldt County Vicinity



Major Roads

Counties

Tribal Areas

This map is inteded for planning purposes only,
it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners,
Humboldt County GIS.
Map Date: 12/16/2021

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DEL NORTE COUNTY

SISKIYOU COUNTY

TRINITY COUNTY

MENDOCINO COUNTY

Pacific Ocean

Yurok Reservation

Karuk Tribe

Hoopa Valley Reservation

Big Lagoon Rancheria

Trinidad Rancheria

Blue Lake Rancheria

Table Bluff Reservation

Bear River Band of the Rohnerville Rancheria

Orick

Trinidad

Arcata

Blue Lake

Eureka

Fortuna

Ferndale

Rio Dell

Willow Creek

Garberville

Shelter Cove

101

96

299

36

Miles

0 5 10

Figure 2.2
Humboldt County General Land Use

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021



Counties

Land Use

City/Urban

Agricultural/Timberland

Open Space/Public Lands

Commercial

Industrial

Mixed Use

Residential

Tribal Lands

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DEL NORTE COUNTY

Pacific Ocean

Prairie Creek Redwoods State Park

Yurok Reservation

Karuk Tribe

Six Rivers National Forest

Orick

Orleans

169

Humboldt Lagoons State Park

Redwood National Park

Big Lagoon Rancheria

Weitchpec

Patrick's Point State Park

Hoopa Valley Reservation

96

Trinidad

Hoopa

Trinidad Rancheria

Moonstone Beach County Park

California Redwood Coast (ACV)

Clam Beach County Park

Hiller Park

McKinleyville

Willow Creek

101

299

Blue Lake Rancheria

Arcata Community Forest

Blue Lake

Arcata

Mad River Fish Hatchery

Humboldt Bay

Miles

0 2.5 5

Figure 2.3a
Population Centers & Major Destinations: North

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021



- Freeways/Highways
- Major Roads
- Counties
- Incorporated City
- Census Designated Place
- Public Land
- Tribal Areas
- Commercial Airport
- Community Center
- Hospital

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Blue Lake
Mad River Fish Hatchery
Manila Dunes Recreation Area
Arcata
Humboldt Bay
Eureka
Sequoia Park
Shasta-Trinity National Forest
Humboldt Bay National Wildlife Refuge
Table Bluff Reservation
Headwaters Forest Ecological Reserve
101
Fortuna
Bear River Band of the Rohnerville Rancheria
Ferndale
Russ Park
Owl Creek Ecological Reserve
Rio Dell
Scotia
Stafford
Grizzly Creek
36
Bridgeville
Redcrest
Humboldt Redwoods State Park
Weott
Petrolia
Mattole Rd
Myers Flat
Miranda
BLM
101
Redway
Garberville
Richardson Grove State Park
Pacific Ocean
MENDOCINO
Miles
0 4 8

Figure 2.3b
Population Centers & Major Destinations: South

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021



- Freeways/Highways
- Major Roads
- Counties
- Incorporated City
- Census Designated Place
- Public Land
- College/University
- Elementary School
- High School
- Middle School
- Commercial Airport
- Community Center
- Hospital

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Figure 2.3c
Population Centers & Major Destinations: Humboldt Bay

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021

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DEL NORTE COUNTY

SISKIYOU COUNTY

TRINITY COUNTY

Pacific Ocean

101

96

299

36

Trinidad

Willow Creek

Mckinleyville

Blue Lake

Arcata

Eureka

Fortuna

Ferndale

Rio Dell

Miles
0 5 10

Figure 2.4
Disadvantaged Communities



Disadvantaged Communities - conditions A only

Disadvantaged Communities - conditions B only

Disadvantaged Communities - conditions A & B

Freeways/Highways

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 1/6/2022

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DEL NORTE COUNTY

SISKIYOU COUNTY

TRINITY COUNTY

Pacific Ocean

101

96

299

36

Trinidad

Willow Creek

Mckinleyville

Blue Lake

Arcata

Eureka

Fortuna

Ferndale

Rio Dell

Miles

0 5 10

Figure 2.4
Disadvantaged Communities



Disadvantaged Communities - conditions A only

Disadvantaged Communities - conditions B only

Disadvantaged Communities - conditions A & B

Freeways/Highways

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 1/6/2022

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In Figure 2.4, "disadvantaged communities" are defined by the following criteria.
(Criteria are based on definitions and data from the U.S. Census (2016 5-year ACS data).)

- ☐ Conditions A – Census block groups with indicators:
  - Racial/ethnic minority – where 20% or more of population is either Hispanic or not White, **and**
  - Households with low incomes (80% or less than the statewide median household income)

- ☐ Conditions B – Census block groups with indicators:
  - Households with low incomes (80% or less than the statewide median household income), **and**
  - at least 3 of 9 following variables
    1. Poverty – where 45% or more of population lives at 200% or less of the federal poverty.
    2. Unemployed – Census block groups where 20% or more of the labor force is unemployed.
    3. Elderly – where 10% or more of population is aged 75 or older.
    4. Young – 20% or more of population is under age 18.
    5. Linguistic isolation – where 5% or more of households have no one over 14 who speaks English only or speaks English very well.
    6. Limited mobility-vehicle access – where 40% or more of housing units with 0-1 vehicles
    7. Limited mobility-active transportation – Smaller block groups without bike facilities access within ½ mile radius.
    8. Limited mobility-transit – Smaller block groups without transit access within ½ mile radius.
    9. Housing cost burden – where 20% or more of occupied housing units pay more than 50% of household income in housing costs.

Pacific Ocean

Yurok Reservation

SISKIYOU COUNTY

Karuk Tribe

101

Orick

169

Big Lagoon Rancheria

96

Hoopa Valley Reservation

Trinidad

Trinidad Rancheria

Willow Creek

Blue Lake Rancheria

299

Arcata

Blue Lake

Eureka

Table Bluff Reservation

TRINITY COUNTY

Fortuna

Bear River Band of the Rohnerville Rancheria

Ferndale

Rio Dell

36

101

Garberville

Shelter Cove

Miles

0 5 10

Figure 4.1
Tribal Areas



Major Roads

Counties

Tribal Areas

This map is inteded for planning purposes only,
it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners,
Humboldt County GIS, U.S. Census.
Map Date: 12/22/2021

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Figure 7.1
Class I Regional Commuter Multi-use Trails

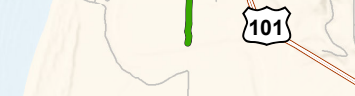


Existing Class I Routes
Roads
Freeways/Highways
Tribal Areas

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021

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Figure 7.2
Class III Regional Bicycle Routes



Existing Class III
Roads
Freeways/Highways
Tribal Areas

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021

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Figure 9.1a
Transit Routes: Countywide

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021



- Transit Center
- Arcata-Mad River Transit
- Blue Lake Rancheria Transit
- Eureka Transit Service
- Redwood Coast Transit (Rte. 20)
- Redwood Transit System
- Samoa Transit System
- Southern Humboldt Intercity
- Willow Creek Intercity
- Counties

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Figure 9.1b
Transit Routes: Arcata



- Transit Center
- Arcata-Mad River Transit
- Blue Lake Rancheria Transit
- Redwood Coast Transit (Rte. 20)
- Redwood Transit System
- Willow Creek Intercity
- Incorporated Cities
- Highways/Freeways
- Major Roads

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021

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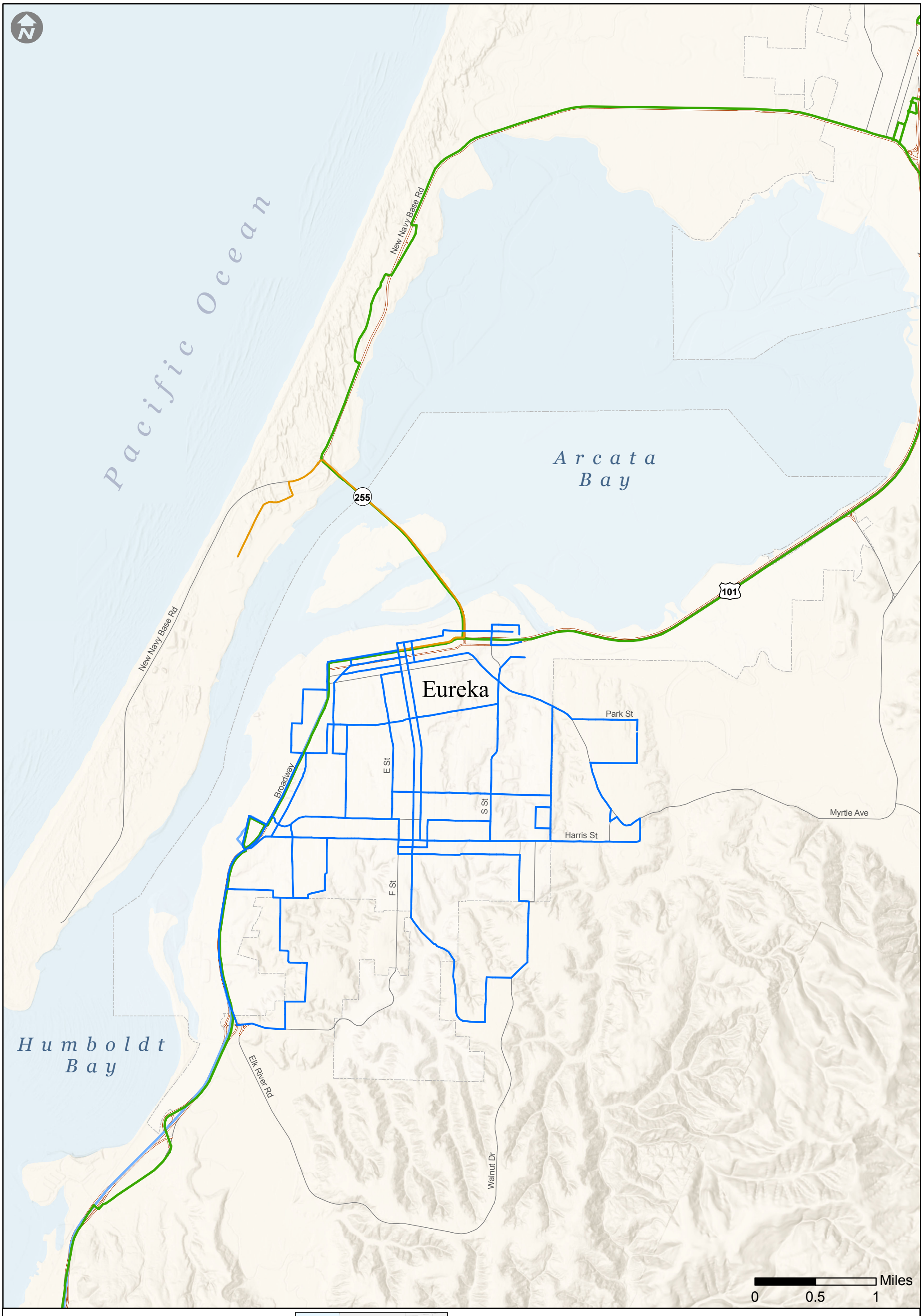


Figure 9.1c
Transit Routes: Eureka



- Eureka Transit Service
- Redwood Transit System
- Samoa Transit System
- Southern Humboldt Intercity
- Freeways/Highways
- Major Roads
- Incorporated Cities

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021

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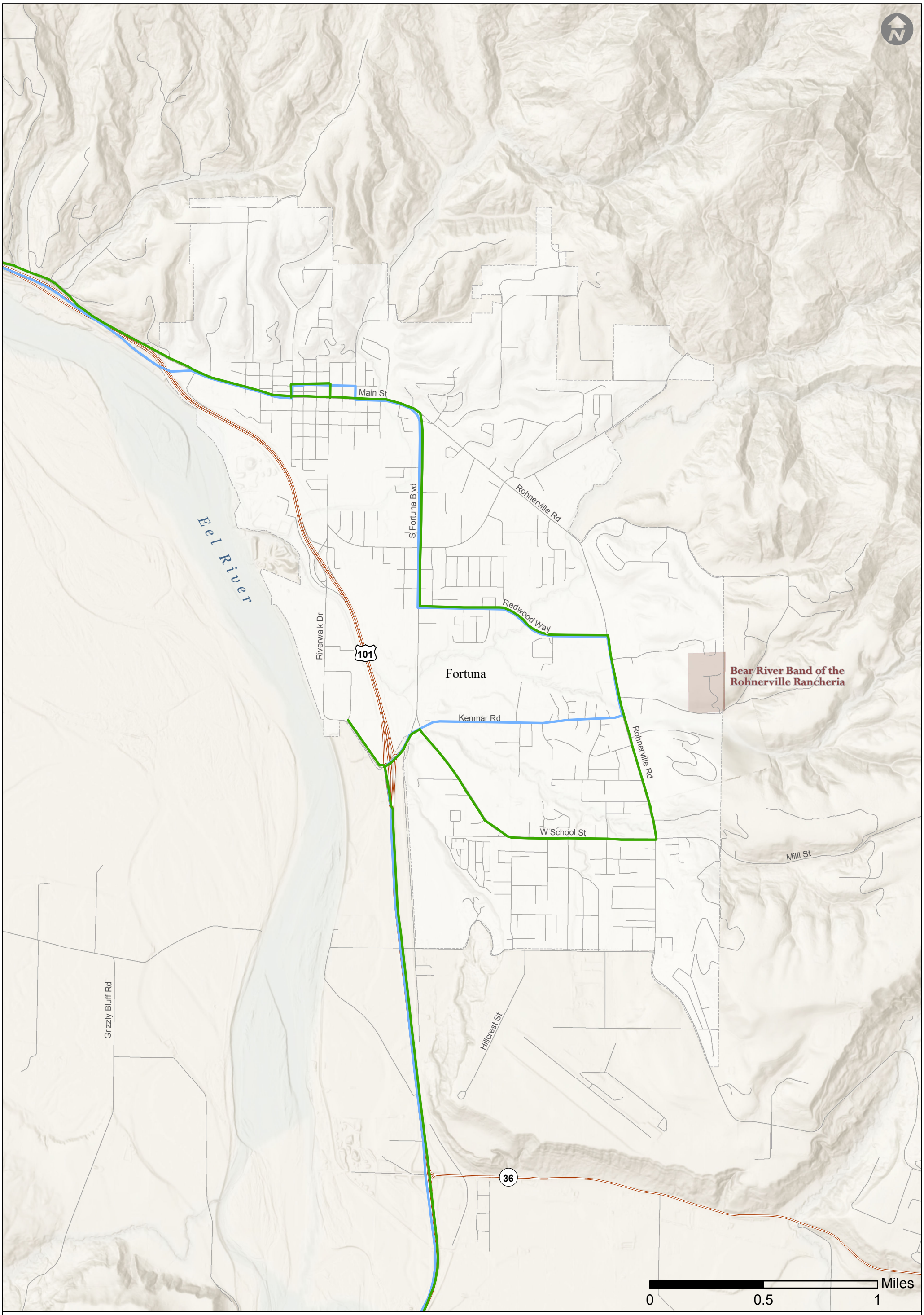


Figure 9.1d
Transit Routes:Fortuna



- Redwood Transit System
- Southern Humboldt Intercity
- Freeways/Highways
- Major Roads, Local Roads
- Incorporated Cities

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/16/2021

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DEL NORTE COUNTY

SISKIYOU COUNTY

TRINITY COUNTY

MENDOCINO

Pacific Ocean

101

Yurok Reservation

Karuk Tribe

Big Lagoon Rancheria

Hoopa Valley Reservation

96

Hoopa

Trinidad

Trinidad Rancheria

California Redwood Coast (ACV)

Willow Creek

299

Blue Lake Rancheria

Arcata

Humboldt Bay

Samoa/Eureka

Samoa Field

Murray Field

Eureka

Fields Landing

Kneeland

Table Bluff Reservation

Fortuna

Bear River Band of the Rohnerville Rancheria

Rohnerville

Ferndale

Rio Dell

Dinsmore

36

101

Garberville

Shelter Cove

0 5 10 Miles

Figure 10.1
Airports



- Counties
- Shipping Terminals
- Commercial Airport (County)
- General Aviation Airport
- General Aviation Airport (County)
- Out of Service Railroad ROW
- Freeways/Highways
- Major Roads

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/22/2021

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Figure 11.1
Harbor/Marine Facilities



Docks
Major Roads
Freeways/Highways

Channel Depth
47 ft
41ft - 44ft
33ft

This map is intended for planning purposes only, it is not a transportation route guide.
Sources: Esri, HCAOG, Planwest Partners, Humboldt County GIS.
Map Date: 12/22/2021

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