VROOM...

Variety in Rural Options of Mobility

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HCAOG

20-YEAR

REGIONAL TRANSPORTATION PLAN

2017 UPDATE

HCAOG

Humboldt County Association of Governments

City of Arcata • City of Blue Lake • City of Eureka
City of Ferndale • City of Fortuna
City of Rio Dell • City of Trinidad
County of Humboldt

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ADOPTED DECEMBER 2017

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HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS
Regional Transportation Planning Agency
Humboldt County Local Transportation Authority
Service Authority for Freeway Emergencies
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RESOLUTION 17-24
A RESOLUTION OF THE HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS TO ADOPT THE REGIONAL TRANSPORTATION PLAN–2017 UPDATE, VARIETY IN RURAL OPTIONS OF MOBILITY (*VROOM*)

WHEREAS, the Humboldt County Association of Governments (HCAOG), acting in its official capacity as the designated Regional Transportation Planning Agency for Humboldt County, bears the responsibility for preparing and adopting a Regional Transportation Plan for its area of jurisdiction; and

WHEREAS, Regional Transportation Plan policies serve to guide the development of a safe, efficient, coordinated, balanced regional transportation system, and such a Plan is intended to identify and document specific actions necessary to address the region's needs for connectivity, mobility, accessibility, and goods movement for the next 20 years; and

WHEREAS, HCAOG is required to adopt and submit an updated Regional Transportation Plan to the California Transportation Commission, and Caltrans every four years; and

WHEREAS, HCAOG has updated the *Humboldt Regional Transportation Plan–Variety in Rural Options of Mobility* (*VROOM)* in conformance with the California Transportation Commission's Regional Transportation Plan Guidelines, and consistent with State and Federal laws; and

WHEREAS, in accordance with guidelines, *VROOM* covers policies for roadways, pedestrian and bicycle systems, public transportation, aviation, goods movement, and finance, plus has added chapters for commuter trails, tribal transportation, emergency transportation, and global climate crisis; and

WHEREAS, *VROOM* has been prepared to reflect the broadest possible interests of all Humboldt County residents and stakeholders and public agency stewards through public and agency involvement; and

WHEREAS, pursuant to the California Environmental Quality Act Section 15164, HCAOG prepared an Addendum to the previously certified (Resolution 14-12) Environmental Impact Report (State Clearinghouse #2013102063) and passed Resolution 17-17 certifying the Addendum for the *Humboldt Regional Transportation Plan 2017 Update*.

NOW, THEREFORE, BE IT RESOLVED, that the Humboldt County Association of Governments does hereby adopt the *Humboldt Regional Transportation Plan 2017 Update–Variety in Rural Options of Mobility (VROOM).*

PASSED AND ADOPTED by the Humboldt County Association of Governments, in the County of Humboldt, State of California, this 21st day of December 2017, by the following vote:

AYES: Sundberg, Strehl, Jones, Hindley, Miller, Johnson, Ornelas, Arroyo, Tucker
NOES: None
ABSENT: Jäger
ABSTAIN: None

Attest:

Marcella Clem, HCAOG Executive Director

Ryan Sundberg, HCAOG Chair

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HCAOG Plans Incorporated by Reference

- Humboldt County Association of Governments Public Participation Plan
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- Humboldt Regional Trails Plan
- Humboldt Pedestrian Master Plan

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LIST OF ACRONYMS

5310	Federal Transit Administration grant program for mass transportation needs of elderly persons and persons with disabilities.
5311, 5311 (f)	Federal Transit Administration grant program for public transit in non-urbanized areas (population under 50,000).
AAC	Aviation Advisory Committee
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 proposed state program)
BIA	Bureau of Indian Affairs
BLRTS	Blue Lake Rancheria Transit System
BT&H	Business, Transportation, and Housing Agency (Umbrella agency over Caltrans before 2013-14 Fiscal Year (MAP-21); current umbrella agency is CalSTA)
BTA	Bicycle Transportation Account (State)
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
CO2	Carbon Dioxide (a greenhouse gas)
CPUC	California Public Utilities Commission
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
F.T.Z.	Foreign Trade Zone
FAA	Federal Aviation Administration
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).
MAP-21	Moving Ahead for Progress in the 21st Century (Went into effect FY 2013-14.)
MKRCTP	Middle Klamath River Community Transportation Plan
MOU	Memorandum of Understanding
NCRA	North Coast Railroad Authority
NPIAS	National Plan of Integrated Airport Systems
NOx	Nitrous Oxide (an air pollutant)
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	Project, Planning and Monitoring
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 Authority
SAFE	Service Authority for Freeway Emergencies
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, previous federal transportation act renewed by congress multiple times (signed into law in 2005; extensions enacted 2009-2012)
SB	Senate Bill
SB 1	Senate Bill 1: Road Repair and Accountability Act of 2017
SB 375	Senate Bill 375: Sustainable Communities and Climate Protection Act of 2008
SCC	Service Coordination Committee (HCAOG committee)
SHA	State Highway Account
SHI	Southern Humboldt Intercity
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
STAA	Surface Transportation Assistance Act
SSTAC	Social Service Transportation Advisory Council (HCAOG committee)
STAF or STA Fund	State Transit Assistance Fund (Enabled by the Transportation Development Act (TDA)
STIP	State Transportation Improvement Program
TAC	Technical Advisory Committee (HCAOG committee)
TAP	Transportation Alternatives Program
TCTC	Trinity County Transportation Commission
TDA	Transportation Development Act
TDP	Transit Development Plan
TE	Transportation Enhancement (Federal, enacted by SAFETEA-LU)
TEA	Transportation Equity Act
TIGER	Transportation Investment Generating Economic Recovery
TNVT	Tish Non-Village Transit
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

1. INTRODUCTION

Complete transportation networks are fundamental to achieving HCAOG's mission and the goals of the Regional Transportation Plan (RTP). A complete transportation network involves operating and maintaining a comprehensive transportation system that upholds safety, connectivity, equity, sustainability and resiliency. 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. By implementing the RTP, HCAOG intends to support the California State Transportation Agency's priority of "creating a sustainable multimodal transportation system that reduces individual vehicle trips and total miles traveled."

President Obama, on December 4, 2015, signed into law the Fixing America's Surface Transportation Act of 2015, or FAST Act (P.L. 114-94). It is the first long-term surface transportation authorization enacted in a decade. The FAST Act affects transportation funding, investment, planning, and programming in all levels of government. The scope for statewide, metropolitan, and nonmetropolitan transportation planning, under the FAST Act, shall address the following factors:

(1) Support the economic vitality of the United States, the States, metropolitan areas, and nonmetropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
(2) Increase the safety of the transportation system for motorized and non-motorized users;
(3) Increase the security of the transportation system for motorized and non-motorized users;
(4) Increase accessibility and mobility of people and freight;
(5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
(6) Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;
(7) Promote efficient system management and operation;
(8) Emphasize the preservation of the existing transportation system;
(9) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
(10) Enhance travel and tourism.

(Federal Final Rule: Subpart B–Statewide and Nonmetropolitan Transportation § 450.200, May 27, 2016.)

A milestone for State transportation funding came in April, 2017, when the California legislature passed, and Governor Brown signed, Senate Bill 1 (Beall), reversing years of the State's transportation revenues not keeping up with inflation. Senate Bill 1 (SB 1) invests $5.4 billion annually over the next decade to address years of unfunded road maintenance on the state highway system and the local road system. The new funding will pay for filling potholes, improving road safety, upgrading streets and roads for active transportation, maintaining seismic safety on bridges and overpasses, and investing in public transit. The revenues for these transportation improvements will come from an increase in the gasoline and diesel fuel excise taxes (effective November 1, 2017); vehicle license fees (effective January 1, 2018); and a new registration fee for zero-emission vehicles (model year 2020 and later, effective July 1, 2020). The revenues will be adjusted for inflation over the ten years. The SB 1 revenues will be split roughly in half between State-maintained highways and bridges, and local street and road repairs, transit agencies and pedestrian and bicycle networks in communities statewide.

COUNTY PROFILE

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 1.1)

What is now known as Humboldt County is the ancestral land of several Native American Tribes. 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. Their populations range in size from Trinidad's 365 residents 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 (135,557) is 0.35% of the statewide population (39,189,035) (CA Department of Finance, 2016). The following population characteristics, from the US Census data, give snapshots of other aspects of Humboldt County's rural makeup.

Table *Intro-1*. Population in Humboldt County, 2016

Location	Total Population
Statewide	39,250,017
Humboldt County (All)	135,557
Incorporated Areas	
City of Arcata	18,137
City of Blue Lake	1,284
City of Eureka	26,881
City of Ferndale	1,433
City of Fortuna	11,954
City of Rio Dell	3,411
City of Trinidad	365

CA Dept of Finance Population Estimates for Cities, Counties, and State, 2016.

Table *Intro-2*. Population by Age in Humboldt County

Location	Total Population	Persons 18 yrs. and over	Persons under 18 yrs.	Persons 65 yrs. and older
Statewide	39,144,818	30,023,902	9,120,916	5,188,754
Humboldt County (All)	**135,034**	**108,590**	**25,784**	**19,894**
City of Arcata	17,752	15,392	2,360	1,675
City of Blue Lake	1,310	1,133	177	209
City of Eureka	26,985	21,835	5,150	3,759
City of Ferndale	1,354	1,160	194	369
City of Fortuna	11,904	8,887	3,017	1962
City of Rio Dell	3,385	2,657	728	563
City of Trinidad	219	205	14	71
Unincorporated County*	72,124	57,321	14,144	11,286

Source: US Census Bureau, 2011-2015 American Community Survey, 5-Year Estimates
*Countywide total minus city populations.

In 2015, 14% of Humboldt County's population was 65 years or older. In 2030, it is estimated that approximately 23% of the County's population will be senior citizens. (California Dept. of Finance, February 2017). 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 *Intro-3*. Race and Ethnicity in Humboldt County

Location	Hispanic %	White %	Black %	American Indian %	Asian %	Pacific Islander %	Other %	Two or more %
Statewide	38.8	60.9	5.8	0.7	14.3	0.4	14.6	4.5
Humboldt County (All)	10.5	81.3	1.2	5.1	2.6	0.3	4.2	5.7
Incorporated Areas								
City of Arcata	14.9	80.6	2.4	2.9	2.4	0.1	6.3	5.9
City of Blue Lake	1.8	79.9	0.8	10.4	1.9	1.9	0.0	4.8
City of Eureka	9.9	84.1	3.6	7.6	7.0	0.6	4.5	7.2
City of Ferndale	5.3	95.7	1.45	0.0	0.5	0.0	1.7	0.5
City of Fortuna	17.3	87.9	1.1	5.8	1.9	0.3	8.5	5.7
City of Rio Dell	9.8	89.8	0.1	4.9	0.3	0.3	2.3	2.3
City of Trinidad	2.7	90.4	0.0	5.0	1.3	0.0	3.1	4.1

Source: US Census Bureau, 2011-2015 American Community Survey, 5-Year Estimates

Table *Intro-4*. Factors that Affect Mobility, Humboldt County

Location	Total Population	% Age 65 and Over	% Age 15 and Under	% No Vehicle	% Persons with Disability	% Poverty Rate	% Unem-ployment	Median Income
Statewide	39,144,818	13.3	3.1	3.1	10.4	16.3	6.3	$61,818
Humboldt County (All)	135,064	14.7	16.2	3.2	16.7	21.4	6.2	$42,197
Incorporated Areas								
City of Arcata	17,752	9.4	10.5	4.9	12.2	40.5	11.0	$29,435
City of Blue Lake	1,310	15.9	11.9	0.0	18.1	18.4	5.8	$56,991
City of Eureka	26,985	13.9	15.6	6.6	18.9	24.5	6.0	$37,094
City of Ferndale	1,354	27.2	11.4	6.7	26.2	9.5	4.9	$43,548
City of Fortuna	11,904	16.4	19.9	4.8	17.8	16.8	5.4	$44,077
City of Rio Dell	3,385	16.6	18.9	2.2	21.7	16.7	3.7	$38,400
City of Trinidad	219	32.4	5.9	3.4	19.6	5.9	2.4	$52,083

Source: US Census Bureau, 2011-2015 American Community Survey, 5-Year Estimates

In the public health realm, practitioners recognize transportation as one of the social determinants of health. Reliable, affordable transportation directly and indirectly affects people's access to basic services and goods. For instance, access to transportation directly affects people's ability to travel to medical appointments, health services, and social events. Transportation indirectly affects people's access to goods and services because it determines whether or not people can get to jobs that provide the means to purchase those goods and services. In Humboldt County, "(b)eing poor, nonwhite or living in an area with low population density significantly increases the chance of transportation problems" (DHHS 2013).

REGIONAL TRANSPORTATION PLANNING AGENCY

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 also benefits from guidance and input from four standing committees: the Policy Advisory Committee (PAC), Service Coordination Committee (SCC), Social Services Transportation Advisory Council (SSTAC), and Technical Advisory Committee (TAC).

HCAOG's mission statement is:

> To develop, operate, and maintain a well-coordinated, balanced, countywide multimodal transportation system that is safe, efficient, and provides good access to all cities, communities and recreational facilities, and into adjoining regions. A balanced multimodal transportation system includes, but is not limited to, a highway, public transit, aviation, marine, railroads, recreation, bicycle, pedestrian, and utility systems.

HCAOG updates the RTP in coordination with the California Department of Transportation (Caltrans) District 1, HCAOG committees, and many other stakeholders, including but not limited to, Native American tribes, local transit authorities, local social service providers, residents, business interests and other stakeholders. To seek the most input and participation from the broadest spectrum of interested stakeholders, including segments who have been traditionally underserved in their transportation needs, HCAOG follows the strategies practices laid out in the *Humboldt County Association of Governments Public Participation Plan* (incorporated herewith by reference).

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 developed the RTP Update 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.). Per the RTP Guidelines, *VROOM* covers: roadway, pedestrian, and bicycle systems (in the Complete Streets Element), and Public Transportation, Aviation, Goods Movement, and Finance Elements. Plus, *VROOM* covers three additional (not required) elements: Trails, Tribal Transportation, and Emergency Transportation, and a brief chapter, Global Climate Crisis, which discusses the impacts of global climate change and sea level rise.

The mission of HCAOG's *Humboldt Regional Transportation Plan Update 2017* is to chart the course to provide ***Variety in Rural Options of Mobility***. We call the RTP "*VROOM*…" for short. *VROOM* is a long-range planning document covering a 20-year planning horizon. It provides a course for future transportation investment in the region, with the goal of building and maintaining a multi-modal, safe and efficient, balanced transportation system.

VROOM is intended to fulfill the following purposes and needs:

- Adopt RTP policies that will guide the development of an efficient, coordinated, balanced regional transportation system, and to improve the mobility of Humboldt County residents, visitors, and goods.
- 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 objective criteria for measuring the performance of the transportation system;
- Identify and document public policy decisions by local, regional, state and federal officials regarding transportation expenditures and financing;
- Identify needed transportation improvements in sufficient detail to serve as a foundation for:
    - Developing the Federal Transportation Improvement Program (FTIP), the Regional Transportation Improvement Program (RTIP) and the Interregional Transportation Improvement Program (ITIP);
    - Facilitating National Environmental Protection Act (NEPA)/404 integration process decisions; and
    - Identifying project purpose and needs.
    - Developing an estimate of emissions impacts for demonstrating conformity with the air quality standards identified in the State Implementation Plan (SIP).
- Promote consistency between the California Transportation Plan, the regional transportation plan and other transportation plans developed by cities, counties, districts, private organizations, tribal governments, and state and federal agencies;
- Provide a forum for: (1) participation and cooperation, and, (2) facilitating partnerships that reconcile transportation issues which transcend regional boundaries and;
- Involve the public, federal, State and local agencies, and local elected officials early in the transportation planning process by including them in dialogue and decisions on the social, economic, air quality and environmental issues related to transportation.

To qualify for funding in the State Transportation Improvement Program (STIP), projects included in an RTIP or the ITIP must be consistent with adopted RTPs. Given the requirements of Government Code § 65080(c), the CTC will only consider STIP funding for projects consistent with an RTP adopted within five years (in non-urban regions) of a STIP application. Federal Transportation Conformity rules require a new conformity determination at not more than three-year intervals.

Each fiscal year, HCAOG approves the Overall Work Program (OWP). The OWP document outlines the transportation planning work to be accomplished, responsible agencies, and funding. One significant purpose of an OWP is to serve as the tool for implementing the projects and programs, and ultimately the goal and objectives, identified in the RTP and its processes. An OWP must be approved by Caltrans before State and Regional Planning Assistance Funds can be used for transportation planning studies or administration.

A **goal** is a vision to try to attain.
An **objective** is a more clearly defined target, or direction, to achieve a goal.
Policies define an organization's approved course of action to achieve specific objectives.

PLAN GOAL & OBJECTIVES

Overall Goal: HCAOG's goal is for Humboldt County to have a comprehensive, coordinated, sustainable, and balanced multi-modal transportation system, so that people in the region can travel and move goods safely and efficiently 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:

- Balanced 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.

- 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, reducing traffic congestion, and using Intelligent Transportation System (ITS) management (e.g. Greater Eureka Area 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 – 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 – Increase safety for users (one or more modes). Reduce transportation-related fatalities and serious injuries.

PLANNING ASSUMPTIONS

VROOM… covers a 20-year planning horizon and, for long-term planning, allows the following assumptions:

- Population – Population growth in Humboldt County will continue at less than 1% rate of growth. The median age of the population will continue to increase slowly; however, K-12 school enrollment will have a net increase through the 2021 term.[1]
- Travel Mode – The private automobile will remain the primary mode of transportation for the majority of trips over three miles. Public transportation will remain a significant service for many, and a vital service for the elderly, youth, and for people with mobility or income limitations. Bicycle and pedestrian travel will increase modestly and steadily, for both recreational and utility purposes.
- VMT – Increasing and improving multimodal opportunities is a way to lessen or minimize the increase in motor vehicle miles traveled (VMT) within the region.
- Goods Movement – Trucking will remain the primary mode of shipping goods in and out of Humboldt County. The 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.
- Environmental Conditions – No change is assumed in attainment status for air or water quality affecting transportation projects. The region will experience more extreme weather conditions and sea level rise in the RTP's 20-year timeframe.
- Planning Requirements – New state and federal requirements with respect to global climate change and greenhouse gas (GHG) emissions will continue to shape the planning process in the future. This RTP is a dynamic document, which will be updated as requirements change.

[1] "Prosperity! 2012: Comprehensive Economic Development Strategy, Humboldt County" Public Review Draft, 2012.

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

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. Future travel pattern needs should be linked with land use zoning to promote a balanced multi-modal transportation system.

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

Figure 1.2 (see Maps Tab) shows general land uses in Humboldt County. Figures 1.3a, b, c, and d shows population centers and major destinations.

RELATED PLANS

The RTP *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 adopted plans that are related to *VROOM* include (but are not limited to):

Recent plans:

- *Humboldt Regional Bike Plan* which was updated in 2017, concurrently with the RTP Update.
- *Transit Development Plan 2017-2021*, which is a short-term plan, required every five years. For this TDP update, HCAOG also developed an accompanying Transit Marketing Plan and 5-year Strategic Plan for the SSTAC (Social Services Transportation Advisory Council).
- *Coordinated Public Transit–Human Services Plan*, which was updated in 2013 and amended in 2016.
- *Countywide Bicycle Parking Guidelines* and *Bike Parking Sourcebook*, which HCAOG staff developed in 2015 with the guidance of an ad-hoc Bicycle Advisory Committee.

Older plans:

- *imagine humboldt!* final report, 2013, which recommends a planning vision and framework for preferred growth scenarios to 2050, developed through the community blueprint planning process.
- *Humboldt County Regional Housing Needs Allocation Plan*, 2013 (and future updates).
- *Humboldt County Regional Trails Master Plan*, prepared and adopted in 2010.
- *Humboldt County Regional Pedestrian Plan*, prepared and adopted in 2008.

In addition to HCAOG's adopted plans, HCAOG has developed, and will implement, the RTP to be consistent with the following plans.

District 1 Climate Change Vulnerability Assessment and Pilot Studies
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 2040

The goals, objectives and proposed actions in the HCAOG RTP correlate with the California Transportation Plan 2040 (CTP 2040). The CTP 2040 provides a statewide, long-range policy framework to meet our future mobility needs and reduce greenhouse gas emissions. The CTP 2040 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. "This integrated, connected and resilient multimodal system supports a prosperous economy, human and environmental health, and social equity" (CTP 2040).

The CTP 2040 unites the State's individual modals 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 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; and

- analyzing completed transportation projects that have reduced wildlife resource impacts for lessons learned (California Department of Fish and Game, 2005)" (CDFW 2016).

The RTP'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 EIR's mitigation measures include actions suggested in the *Transportation Planning Companion Plan*. Local jurisdictions will conduct subsequent project-level environmental assessments, per CEQA and/or NEPA.

Caltrans' Smart Mobility 2010: A Call to Action for the New Decade (2010)

Smart Mobility 2010 articulates the state's expanded 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 transportation strategy focuses on moving people and freight while enhancing California's economic, environmental, and human resources. The means to do this is to emphasize convenient and safe multimodal travel, speed suitability, accessibility, management of the circulation network, and efficient use of land. The Smart Mobility Framework identified best practices and a replicable process that Caltrans and partner agencies can use to incorporate smart mobility into their work. Lessons learned and conclusions are presented in the final report, *Smart Mobility Framework Implementation Pilot Study* (March 2015). The Smart Mobility Framework is, the final report says, "sufficiently flexible and resilient to fit the needs of different situations, and that it does not require an all or nothing approach."

Regional Intelligent Transportation Systems (ITS) Master Plan

HCAOG is currently participating on a technical advisory committee to develop a Regional ITS Master Plan through a cooperative effort by Caltrans, the Federal Highway Administration (FHWA), and the North State Super Region, which consists of 16 rural northern counties in California. The Plan is scheduled to be completed in 2018.

The ITS Master Plan is a roadmap to integrate ITS strategies into the North State Super Region's transportation system over the next ten years. Examples of ITS technology applications include the use of speed cameras, electronic message signs, roadway weather information system, transit automated vehicle locator GPS devices, traveler information, etc.

The vision stated in the Draft Regional ITS Master Plan is to "Provide technology, systems and equipment to support the transportation goals of Caltrans, the 16 counties and the local communities within the Upstate California Super Region in a manner that is collaborative and performance-based, thereby maximizing the safety, efficiency, reliability and overall performance of the transportation system."

Humboldt County Transportation-Disadvantaged Populations Report

The *Humboldt County Transportation-Disadvantaged Populations Report* was developed by the Eureka-based Redwood Community Action Agency's (RCAA's) Planning for Active Transportation and Health (PATH) program. The report provides tools for decision makers to plan for more functional and equitable access to goods, services and employment particularly for the approximately 30 percent of non-drivers.

PUBLIC & AGENCY PARTICIPATION

HCAOG's public involvement program was devised to allow jurisdictions, agencies, transportation stakeholders, and the general public ample time and opportunities to discuss, review, and comment on the RTP update process and update drafts. HCAOG's RTP update process, which began Fiscal Year 2016-17, did not occur in isolation. HCAOG combined public outreach and involvement for simultaneous projects in order to maximize efforts and outcomes. The main projects included updates to the *Regional Bike Plan*, the 5-year *Transportation Development Plan*, the Humboldt Bay Area Bike Map, the Unmet Transit Needs Report, as well as a Transit Marketing Plan. HCAOG staff strives to make the transportation planning processes as coordinated and accessible as possible for all stakeholders.

To allow all parties more time to review the RTP updates, HCAOG released individual draft chapters as they were ready. Each administrative draft was reviewed by HCAOG committees at their respective public meetings. Thereby, the general public, agencies, and other stakeholders could also review and comment on the administrative drafts going through committee review, even before the chapters were approved for formal public release.

After the HCAOG Board approved all the administrative drafts, HCAOG released all draft chapters together in one Public Draft of *VROOM...*. The formal comment period occurred from September 7 to October 9, 2017. HCAOG notified stakeholders when all RTP update public drafts were released and when special public meetings were held. Stakeholders who have requested to be on an HCAOG committee's "cc list" receive meeting notices, agendas, and packets.

HCAOG's committees and Board include representatives with varied transportation-related responsibilities and interests. The make-up of these groups is as follows:

<u>Service Coordination Committee (meets bi-monthly)</u>
Transit operators
Paratransit operators
Humboldt State University
College of the Redwoods
Caltrans-District 1 Local Assistance

<u>Social Service Transportation Advisory Council (meets quarterly)</u>
Area 1 Agency on Aging
City Ambulance
Coordinated Transportation Services Agency

Fortuna Transit
Headstart/Early Headstart, North Coast Children Services
Humboldt Council for the Blind
Humboldt Senior Resource Center
Humboldt Transit Authority
Public representatives of potential transit users who is 60 years of age or older
Public representative of potential transit users who is handicapped
Tri-County Independent Living

Technical Advisory Committee (meets monthly)
California Highway Patrol
Caltrans-District 1 Local Assistance
Cities and County Public Works Departments
Transit Operators
Native American Transportation/Planning Departments (Bear River Band of the Rohnerville Rancheria, Blue Lake Rancheria, Hoopa Valley Tribe, Karuk Tribe, Trinidad Rancheria, and Yurok Tribe)

Policy Advisory Committee (meets monthly during Board meetings)
Caltrans-District 1
Humboldt Transit Authority
HCAOG Board of Directors

Board of Directors (meets monthly)
City Mayors (or designees)
County Supervisor

HCAOG has made all drafts available on the HCAOG website (www.hcaog.net), and in hard copy at the HCAOG office. Hard copies of the draft *VROOM* were also available to view at:

- Humboldt Transit Authority, 133 "V" Street, Eureka.
- Humboldt County library branches
- Office of the Board of Supervisors, Humboldt County Courthouse, 825 5th Street, Eureka
- City Halls (Trinidad, Blue Lake, Arcata, Eureka, Ferndale, Fortuna)

HCAOG also provided, upon request, hard copies and compact disc copies of the full draft of *VROOM*.

TARGETED PUBLIC OUTREACH

While we were preparing the RTP update during the year, we also attended various events and public meetings to increase public outreach. Because HCAOG was simultaneously updating the different plans this year, we were able to inform and engage the public about multiple planning efforts and issues at one time. For instance, we attended several Bike Month Humboldt events to provide information and solicit input on both the *Regional Bike Plan* and the RTP updates. Additionally, we attended the Humboldt Trails Council's strategic planning meeting, which was an opportunity to gather community feedback on the RTP update and general transportation planning issues, as well as input on updating the regional Humboldt Bay Area Bicycle and Trail Map. Other

community meetings we attended to solicit community input on regional transportation planning issues include:

- Arcata Chamber of Commerce
- Bike Month Humboldt Coalition
- City of Arcata–Energy Committee
- City of Arcata–Transportation Safety Committee
- Eureka Chamber of Commerce
- Humboldt Bay Bicycle Commuters Assoc.
- Humboldt County–Aviation Advisory Committee
- Safe Routes to School Countywide Task Force

HCAOG notified and/or had participation form the following organizations and stakeholders:

Active Transportation Advocacy Organizations
Arcata Bike Library
Big Foot Bicycle Club
BikesThere
Bike Month Humboldt Coalition
Coalition for Responsible Transportation Priorities
Department of Health and Human Services, County of Humboldt
Friends of Annie & Mary Rail-Trail
Humboldt Bay Bicycle Commuters Association
Humboldt Trails Council
LatinoNet
Redwood Coast Mountain Bike Association
Redwood Community Action Agency-Natural Resource Services Division
Safe Routes to School Countywide Task Force
Safe Routes to School Greater Eureka Task Force

Goods Movement Stakeholders
Fly Humboldt
Frank Zabel Trucking
Goselin Transportation
Humboldt Bay Harbor Working Group
Johns Trucking

Economic Development/Commerce Organizations
Chambers of Commerce
Humboldt County Convention & Visitors Bureau
Redwood Regional Economic Development Corporation

Business Associations
Humboldt Association of Realtors

Other Organizations
Friends of the Dunes
Humboldt Coalition for Property Rights
Humboldt County Volunteer Organizations Active in Disaster
Mattole Salmon Group
Redwood Coast Village
Trinidad Land Trust

HCAOG staff used traditional print, radio, and television media as well as social media for public outreach. We used media outlets in the usual manner with press releases, public service announcements, calendar listings, and interviews or guest columns (Lost Coast Outpost, The Redwood Times, Times Standard, Two Rivers Tribune, North Coast Journal, KMUD, KHSU, KHUM's Happy Trails, KIEM-TV, etc).

AGENCY COORDINATION

HCAOG notified local, regional, state, and federal regulatory agencies, including agencies responsible for land use, natural resources, and environmental protection. HCAOG's master list for such agencies is based on the State Clearinghouse's distribution list of reviewing agencies, per CEQA. We augment that list with local agencies that would have a stake in long-range regional transportation planning. The agencies include, but are not limited to, the following.

Regulatory Agencies

- □ U.S. Bureau of Land Management – Arcata Field Office
- □ US Fish & Wildlife Service – Pacific Southwest Region
- □ California Coastal Commission – North Coast District Office
- □ California Department of Fish & Wildlife – Northern Region
- □ North Coast Unified Air Quality Management District
- □ Regional Water Quality Control Board

Local & State Agencies

- □ Caltrans District 1 Local Assistance
- □ College of the Redwoods Library
- □ Community Service Districts
- □ Fire Departments and Fire Protection Districts
- □ Humboldt Bay Harbor, Recreation, and Conservation District
- □ Humboldt Bay Municipal Water District
- □ Humboldt County Advanced Planning
- □ Humboldt County Department of Health and Human Services
- □ Humboldt County Office of Education
- □ Humboldt County Office of Emergency Services
- □ Humboldt State University Library
- □ North Coast Railroad Authority
- □ Shelter Cove Resort Improvement District #1
- □ Southern Humboldt Unified School District
- □ U.S. Coast Guard, Humboldt Bay

These agencies were notified during the last RTP update, in 2014, when HCAOG prepared a new Program Environmental Impact Report (EIR), in compliance with the California Environmental Quality Act (CEQA). For the proposed RTP 2017 update, HCAOG assessed whether the proposed changes to RTP would have potentially significant environmental impacts if the HCAOG Board adopted and implemented the Regional Transportation Plan 2017 update to *VROOM*. HCAOG staff determined that the updates have not changed the nature or scope of *VROOM* from the 2014 version, and therefore an Addendum to the EIR was appropriate. CEQA does not require lead agencies to circulate an addendum to a previously certified EIR; nonetheless, HCAOG sent regulatory and other stakeholder agencies the draft Addendum and offered a three week review and comment period before the Addendum went to the HCAOG Board for review.

On November 16, 2017, the HCAOG Board certified the Addendum to the Final Program EIR. The original determination stands: with mitigation measures implemented as described in the

mitigation and reporting plan (Appendix B of the Final EIR), the project, *VROOM,* will not have a significant effect on the environment. See Appendix B of *VROOM* for the Addendum. The Final EIR is available to view under separate cover and at www.hcaog.net.

ACCOMPLISHMENTS SINCE THE 2014 RTP

Table *Intro*-5, on the following pages, lists the transportation projects that HCAOG member jurisdictions and Caltrans have completed since 2014, when HCAOG last adopted *VROOM*. The completed projects are from the 2014 RTP's Action Plans for each mode, unless otherwise noted.

Table *Intro*-5. Regional Transportation Plan Projects Completed Since 2014

Jurisdiction	Mode	Project Name/Location	Project Description	Funding Source
City of Arcata	Bicycle & Pedestrian (B&P)	Valley East and Valley West improvement project	Roadway rehab with improvements for bike, pedestrian transit, landscaping and gateway	Measure G match
	B&P	Foster Ave Extension	Connect two north-south arterials (Alliance with 101-G-H corridor), Class I and II	Measure G
	B&P	Arcata City Trail, Foster Avenue to Samoa Boulevard	Rail-with-Trail Class I multi-use path	ATP, Measure G
	B&P	Humboldt Bay Trail North	Rail-with-Trail Class I multi-use path, Samoa Boulevard to Bracut Marsh	ATP, Measure G
City of Eureka	B&P	Eureka Waterfront Trail: Truesdale to Del Norte (Phase A)	Class I multi-use trail	Non-freeway funds (ENFY)
	B&P	Eureka Waterfront Trail: Del Norte to C Street (Phase B); and Adorni Trail to Tydd Street (Phase C)	Class I multi-use trail	ATP, Rec Trails Program, Coastal Conservancy, ENFY, HCAOG RPA
City of Fortuna	B&P	Ross Hill Road: Kenmar to School Street	Pedestrian and bike safety improvements	ATP/SR2S
	B&P	Rohnerville Road: Redwood Way to Jordan Street	Reconstruct with sidewalk and bike lanes	STIP
County of Humboldt	Highway & Road (H&R)	Eureka–Myrtle, Lucas, Harris	Sidewalk infill	STIP
	H & R	McKinleyville–Central Avenue: School to Hiller	Install median	HSIP
	H & R	Cutten–Walnut & Fern Street	Traffic signal installation	STIP
	H & R	Briceland–Thorne Road	Curve correction	HRRR
	H & R	Union Street	Shoulder widening & geometric improvements	STIP
	H & R	Orleans–Red Cap Road	Shoulder widening	
	B & P	Freshwater–Myrtle Avenue: Pigeon Point to Mitchell	Bicycle lane improvements	BTA
	B & P	Redway	Pedestrian safety improvements	TE
	B & P	McKinleyville–School Road: Salmon to Fischer	Sidewalks	TE
	B & P	McKinleyville–School Road: Washington	Sidewalks & bike lanes w/roundabout	Prop 1B & Developer

Jurisdiction	Mode	Project Name/Location	Project Description	Funding Source
		to Salmon		
	B & P	Eureka–Oak & F Street	Sidewalks, speed table crosswalk, center median haven	SR2S
	B & P	McKinleyville–Murray Road	Sidewalks, bulbouts, center median haven	SR2S
Caltrans	H & R	101–in Arcata from 11th Street overcross to the Arcata overhead	Install cable median barrier	2013 SHOPP
	H & R	101–from Arcata Slough Bridge to Arcata Overhead	Eureka/Arcata capital preventative maintenance and restripe	2012 SHOPP
	H & R	101–various locations from Westhaven Drive to Trinidad Rd.	Humboldt 101 seismic retrofit	2013 SHOPP
	H & R	101–near Rio Dell from Eel River Bridge to south of Van Duzen Bridge	Median barrier installation	2013 SHOPP
	H & R	City of Fortuna Maintenance Station	Excavate contaminated material	2014 SHOPP
	H & R	299–near Blue Lake near Bair Road	Acorn curve improvement	2014 SHOPP
	H & R	299–near Blue Lake at Mill Creek Bridge	Mad River fish passage mitigation	2012 SHOPP
	H & R	299–near Blue Lake at Chezem	Green Point sink restoration	2012 SHOPP
	H & R	169–various locations	Widening and Metal Beam Guardrail	2012 SHOPP
	H & R	36–at Carlotta from Wilson Lane to 0.5 W of Cummings Creek Road	Carlotta Left Turn Channelization	2012 SHOPP
	H & R	101–in Trinidad between 6th Street and Trinidad Road exit	New Interchange	STIP (PID)
	H & R	101–upgrade two Humboldt County bridges	Bridge Seismic Retrofit	SHOPP
	B & P	96–in Hoopa from Loop Road near Hostler Creek Bridge	Shoulder widen and lighted crosswalk	2012 SHOPP
	B & P	96–Downtown Hoopa	Pedestrian safety, traffic calming, drainage improvements	Partially funded

REFERENCES

CITATIONS

CDFW 2016 (California Department of Fish & Wildlife) *Transportation Planning Companion Plan*. Prepared for CDFW by Blue Earth Consultants. (December 2016) (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=136128&inline, accessed November 30, 2017.)

DHHS 2013 (Department of Health and Human Services, Humboldt County) *2013 Community Health Assessment*. (March 12, 2014) (https://humboldtgov.org/documentcenter/view/1302, accessed December 1, 2017.)

2. COMPLETE STREETS ELEMENT

"Complete streets are those that enable safe access and mobility amongst motorists, bicyclists, pedestrians, and transit service."
– California Transportation Plan 2040

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

The Complete Streets Act of 2008 requires California cities and counties to adopt transportation plans that accommodate all users of roadways, including pedestrians, transit, bicyclists, the elderly, children, motorists, and the disabled. Transportation planning in California now expressly strives to "plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways...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 "Complete Streets" directive, which states that:

> …Addressing safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets" beginning early in system planning and continuing through project delivery and maintenance and operations. (Caltrans Deputy Directive 64-R2, 2014)

HCAOG explicitly and consistently upholds Complete Streets policies in *VROOM*, foremost in the Complete Streets Element, but also in the Commuter Trails Element and Public Transportation

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

Element. In addition, 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.

EXISTING ROADWAY SYSTEM

The following briefly describes characteristics of the region's existing roadway system and the concepts of "level of service."

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.

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

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.

ROADWAYS: THE BUILDING BLOCKS OF CITIES

Nearly one-third are one mile or shorter.[2] 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.

[2] 2009 National Household Travel Survey, California Add-On

Different Classes of Streets/Roads

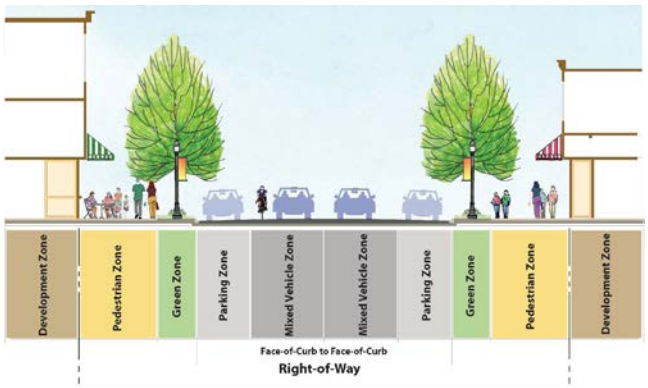
In older towns and neighborhoods in the United States (i.e., pre-automotive 19th century), streets were laid out in grid patterns, with short blocks and frequent intersections. Shops and services were interwoven with residential, sometimes industrial, and other uses. The layout was, in turns, the cause or the effect of denser development, which accommodated people to walk and bicycle to most of their errands and activities. This urban layout is called commonly 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 farther out and less dense. 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 for trips of shorter distances. Speeds are lower than arterials.

A Conceptual Road Design for a "Main Street"



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

- **Local roads** carry low volumes of traffic and have the lowest speed limit. They are expected to be access 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.

The road network concept is 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.

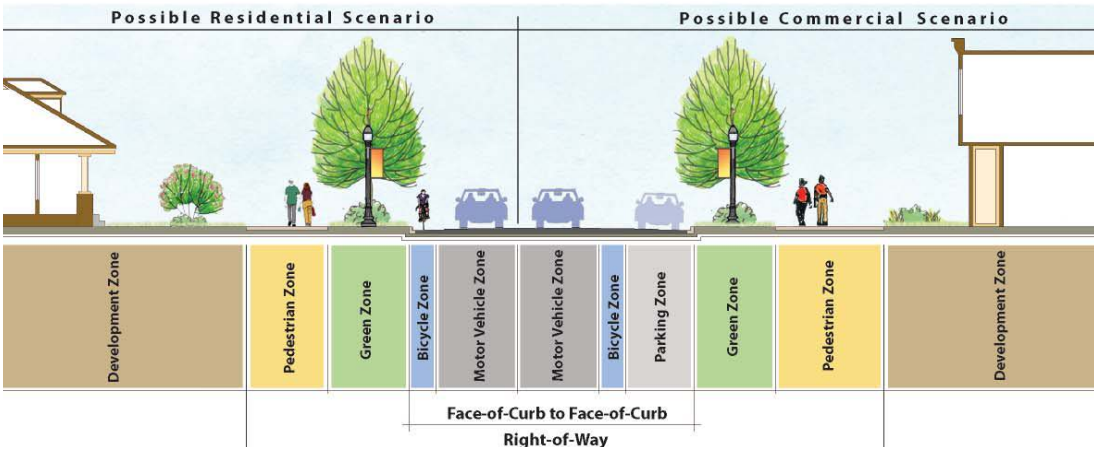
State highways in Humboldt County are as follows (mileage for portion within county):

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?

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

A Conceptual Road Design for an "Avenue"



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

"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), median, shoulder, sidewalk, landscaping, on-street parking spaces, bikeways, and gutters, bioswales, or ditches.

Sidewalks and Crosswalks

(Included by reference is the Humboldt County Regional Pedestrian Plan (HCAOG 2008.)
Sidewalks and crosswalks are the standard 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 programs and 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); 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, usually 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 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.

> Encourage local governments to develop communities with gathering places and mixed-use local shops with walkable paths, bike lanes, and convenient transit stops (coordinated to access jobs, health care, and entertainment venues), that will also accommodate goods deliveries.
>
> *– CTP 2040*

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.

Table *Streets-1*. Bikeway Classifications

Bikeway Class*	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: Hiksari' Trail along the Elk River (Herrick/101 park-n-ride to Truesdale Avenue), Waterfront Trail (Truesdale Ave. to C St.), Waterfront Boardwalk. • Arcata: 18th Street bridge-101 overpass; City Trail (along Foster Avenue; 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.
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.

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

The popular Hammond Coastal Trail is a multi-modal trail and the county's longest bike path by far. The Hiksari' Trail is 1.5-mile multi-use trial in the City of Eureka's Elk River Access Area. The Hiksari' Trail is a segment of the contiguous Eureka Waterfront Trail. Humboldt's most prominent bicycle touring route is the Pacific Coast Bike Route, which traverses the county north to south and is part of the California Coastal Trail. Figure 2.1 (see Maps Tab), shows existing and proposed Class III bicycle routes, bicycle shops, and bicycle parking in the County. (Trails are discussed further in the Commuter Trail Element.)

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	

GOAL, OBJECTIVES, & POLICIES

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

GOAL: Throughout Humboldt County, the streets, roads, and highway system meet the transportation and 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 bicycle, bus, pedestrian, automobile, and truck travel.

OBJECTIVES: The policies listed in the Complete Streets Element will help meet the RTP's main objectives (listed in alphabetical order):

- Balanced Mode Share/Complete Streets
- Economic Vitality
- Efficient & Viable Transportation System (includes Preserving Assets)
- Environmental Stewardship
- Equitable & Sustainable Use of Resources
- Safety

The policies below are grouped according to the RTP's main objectives (chapter 1, Introduction, fully describes the six main objectives). The objectives support and work in tandem with one another. Thus, a policy can help meet more than one objective.

OBJECTIVE: BALANCED 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 for active transportation.*
- *Support and implement projects and policies that increase biking and walking, especially for short trips, first/last mile transit trips, and school trips. {California Transportation Plan 2040}*
- *Create safe and effective walking and bicycling facilities that create neighborhood connectivity and continuity. {California Transportation Plan 2040}*

Policy CS-1 HCAOG shall encourage and facilitate local jurisdictions, local Native American Tribes, Caltrans, and non-profits to individually and collaboratively plan, install, and maintain roads in Humboldt County to build a coordinated and balanced transportation system. *(Also supports objectives: Efficient & Viable Transportation System, Economic Vitality)*

Policy CS-2 HCAOG recognizes the planned Humboldt Bay Trail as a regional priority multi-use trail, and supports multi-jurisdictional, public, and private efforts to develop it. *(Also supports objectives: Efficient & Viable Transportation System, Economic Vitality)*

Policy CS-3 HCAOG shall pursue grants and public-private partnerships to augment funding for infrastructure and non-infrastructure projects and planning for pedestrian, bicycle, and transit facility improvements. HCAOG shall identify and help secure the financial resources necessary to accommodate HCAOG's Complete Streets and active transportation policies adopted in the Regional *Bicycle Plan*, *Regional Transportation Plan (VROOM)*, *Regional Master Trails Plan*, and *Regional Pedestrian Plan*. (*Also supports objective: Economic Vitality, Efficient & Viable Transportation System, Environmental Stewardship)*

Policy CS-4 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-R1. *(Also supports objectives: Economic Vitality, Environmental Stewardship, Equitable & Sustainable Use of Resources, Safety)*

OBJECTIVE: ECONOMIC VITALITY

Policy CS-5 HCAOG shall encourage and promote regional "complete streets" projects for the demonstrated economic benefits they bring to local businesses, markets, and property values.

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

- *Maintain the roadway system in a condition that maximizes resources and uses, and minimizes disruptions and costs.*

Policy CS-6 HCAOG shall pursue local options for developing a funding program to help maintain and preserve the regional roadway system. *(Also support objectives: Complete Streets/Balanced Mode Share, Equitable & Sustainable Use of Resources.)*

Policy CS-7 HCAOG shall utilize the "Humboldt County Corridor Preservation Report" (HCAOG, May 2010) to guide strategies and decisions for protecting planned corridors. (*Also supports objectives: Economic Vitality, Equitable & Sustainable Use of Resources.)*

Policy CS-8 HCAOG will accelerate programming for regional projects that retrofit existing roads to provide safe and convenient travel by all users. (*Also supports objective: Safety)*

Policy CS-9 HCAOG supports a "fix it first" priority of protecting and preserving what we have first when allocating resources to roadways and other transportation assets.

Also applicable: **Bike Plan Policy 4.3** 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. *(Also supports objectives: Complete Streets/Balanced Mode Share, Economic Vitality, Environmental Stewardship.)*

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

- *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 CS-10 HCAOG shall favor first projects that, by design and siting, will result in no significant adverse environmental impacts, and secondarily projects that result in no significant adverse impacts due to mitigation. *(Also supports objective: Equitable & Sustainable Use of Resources.)*

Policy CS-11 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. *(Also supports objectives: Complete Streets/Balanced Mode Share, Economic Vitality, Equitable & Sustainable Use of Resources, Safety)*

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Policy CS-12 HCAOG shall promote equity, cost effectiveness, and modal balance in programming and allocating funds to regionally significant roadway and trail projects. *(Also supports objectives: Complete Streets/Balanced Mode Share, Economic Vitality, Efficient & Viable Transportation System.)*

California must continue to promote active transportation.

– California Transportation Plan 2040

Policy CS-13 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. *(Also supports objectives: Complete Streets/Balanced Mode Share, Efficient & Viable Transportation System.)*

OBJECTIVE: SAFETY

- *Improve overall safety for motorists, bicyclists, pedestrians, and transit users on all county, city, and state highways and streets.*

Policy CS-14 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 (Class I, II, or III) within one mile of all public schools and public transit connections. *(Also supports objective: Complete Streets/Balanced Mode Share)*

Policy CS-15 HCAOG supports roadway design standards that increase bicyclist and pedestrian safety and will work with local jurisdictions to help implement innovative designs and engineering projects that have been shown to improve bicyclist and pedestrian safety.

Policy CS-16 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.

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. And the combined needs 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 population growth and increased vehicle volumes.
- *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.
- *Maintenance & rehabilitation backlog* –Humboldt County's pavement condition index (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).

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 2017 is over $302.9 million (see Table *Streets-3*).

All California counties will 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 will be 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.)

Table *Streets*-3. Roadway Maintenance & Rehabilitation Backlog (September 2017)

Jurisdiction	Total($ million)
Arcata	13.8
Blue Lake	1.5
Eureka	29.1
Ferndale	2.9
Fortuna	19.9
Rio Dell	3.6
Trinidad	0.2
County of Humboldt	210.3
Hoopa Valley Tribe	21.6
TOTAL	302.9

LEVEL OF SERVICE (LOS)

It is standard practice for transportation planning agencies and departments in the U.S. to assess exiting and project 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 impact. However, a new law regarding the California Environmental Quality Act (CEQA), has mandated an alternative approach.

Senate Bill 743 (Steinberg, 2013) intends to reduce GHG emissions by removing barriers to infill development, and projects that increase walking and biking and public transportation infrastructure and facilities. Amended CEQA Guidelines, as proposed, recommend replacing LOS and using vehicle miles traveled (VMT) as the most appropriate measure of project transportation impacts.[3]

Transportation impacts may also be measured by automobile trip generated. Once the amended CEQA Guidelines are adopted to include those alternative criteria, auto delay will no longer be considered 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." (proposed new Public Resources Code §15064.3 (CEQA Statute)). Public agencies may opt to use the VMT analysis now, but will have up to two years to transition to the new rules. The amended regulations are anticipated to be effective statewide in 2019.

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.

[3] "Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA," Governor's Office of Planning and Research, State of California. January 20, 2016.

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

- 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, shows the top priority short-term (0-10 years) and long-term (11-20 years) roadway improvements for Humboldt County's regional "complete streets" system. Members of HCAOG's Technical Advisory Committee (TAC) self-reported which of the RTP's main objectives applied to their respective proposed projects. (The main objectives are: balanced mode share/complete streets; economic vitality; efficient and viable transportation system; environmental stewardship; equitable and sustainable use of resources; and safety. See Chapter 1 for definitions.) Projects that will meet the most objectives are the top priorities.

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.[4]

[4] Available at the HCAOG office and online at www.hcaog.net. To view a city's bike plan, contact its Public Works Department.

In Table *Streets*-4, below, projects that will fulfill all six of the objectives, or that will fulfill five objectives including Balanced Mode Share/Complete Streets, are high-priority projects of the Complete Streets Element; they are shaded green.

Table *Streets*-4 Complete Streets Projects –Short-Term & Long-Term

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF ARCATA											
Old Arcata Road; Buttermilk to Jacoby Creek Road	ST	X	X	X	X	X	X	Rehabilitation, pedestrian-bicycle and calming improvements, gateway at Jacoby Creek Road	STIP, Measure G, ATP	2018-21	$4,124
Residential streets citywide	ST				X	X	X	Annual residential streets improvement program (see City's PMP)	Measure G	2014-24	$2,500
Hwy 255 at Hwy 101 – Roundabouts	ST	X	X	X	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	2018-20	$3,000
Hwy 101 at Sunset and L.K Wood Boulevard – Roundabout	ST	X			X	X	X	Convert 5-way intersection to roundabout and create safer segregated bicycle/pedestrian	Not funded; City match	2018-20	$1,000
Guintoli Lane-Hwy 299 intersections, Valley West and Valley East to West End Road	ST	X	X			X	X	Rehab, restripe and improve level of service (roundabouts or channelization). Potential bus park-and-ride at Wymore Road	Measure G, apply for grant funds*	2018-22	$2,200
Annual Roadway Improvements Project (based on city pavement management program)	ST			X	X	X	X	Principally on city bus routes; arterial and collectors (refer to City PMP)	Measure G, apply for grant funds*	2014-24	$8,000
		**Assumes 50% Measure G match + 50% grant funds*								***Arcata ST Subtotal***	**$20,824**
										Arcata LT Subtotal *Subtotal = $20,824*	**0**

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

Table continues on next page.

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF BLUE LAKE											
South Railroad Avenue from Chartin Way to Broderick Lane	ST	X	X			X	X	Repave, rehab and reconstruction	Not funded	2018/19	$1,000
Greenwood Road/Railroad Ave/G Street/ Hatchery Road, from Blue Lake Boulevard to Mad River Bridge	ST	X	X	X		X	X	Rehab and reconstruction with pedestrian improvements, bike land striping, signage, and traffic calming	Not funded	2019/2020	$3,185
Hartman Lane/G Street, from Blue Lake Boulevard to Railroad Avenue	ST	X	X			X	X	Rehab and reconstruct with pedestrian improvements	Not funded	2020/21	$1,400
I Street, from Blue Lake Boulevard to First Avenue	LT	X	X			X	X	Rehab and reconstruct with pedestrian improvements	Not funded	2023/24	$1,200
Annie and Mary Trail, Phase I: South Railroad Ave ROW and old A&M railbed, from Chartin Road to H Street	ST	X	X	X	X		X	Class I rail-trail, sidewalks, bridge and traffic calming; includes education to promote active transportation	ATP ($976)	2017/18-19/20	$983
First Ave from Greenwood Ave to I Street	LT	X	X			X	X	Rehabilitation and reconstruction with pedestrian improvements	Not funded	2024/25	$1,500
										Blue Lake ST Subtotal	**$6,568**
										Blue Lake LT Subtotal	**$2,700**
										Subtotal = $9,268	

Table continues on next page

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF EUREKA											
Harrison Ave from Harris St to Myrtle Ave	ST	X	X	X	X	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	LT		X		X	X	X	Signalization and signalization modifications	Not funded	2023/24	$835
Henderson Street from I Street to Fairfield Street	LT	X	X	X	X	X	X	Road rehabilitation, ADA, bicycle lanes, bus pullouts, storm drains	Not funded	2018/19	$750
Myrtle Ave from 5th St to Harrison Ave	LT	X	X	X	X	X	X	Congestion relief, ADA, bicycle facility	Not funded	2023/2024	$600
South Gateway of Eureka	ST		X	X			X	Beautification, bike/ped facilities, traffic calming	Not funded	2020/21	$1,900
Waterfront Drive from G Street to J Street	ST	X	X		X		X	Connection Phase 2	Partially: STIP & Non-Fwy Funds	2018/19	$4,157
Hawthorn Street from Broadway to Felt, Felt St. from Hawthorn to Del Norte, and 14th St. from Broadway to West Avenue	ST	X	X			X	X	Road rehabilitation, ADA, bicycle facility	Not funded	2018/19	$650
Highland Avenue from Broadway to Utah Street and Koster Street from Del Norte to Washington Street	ST		X			X	X	Road rehabilitation, ADA	Not funded	2019/20	$650
3rd Street from L Street to R Street, and Glen St from Harris St to Allard St	ST	X	X			X	X	Road rehabilitation, ADA, bicycle facility	Not funded	2020/21	$400
6th and 7th Streets from Myrtle Avenue to Broadway	ST	X	X	X	X	X	X	Road rehabilitation, ADA, bike lanes, bus pullouts	Not funded	2020/21	$1,200
Fairway Drive from City limits to Ridgecrest Drive; Campton Road from City limits to Oak Street	ST	X	X			X	X	Road rehabilitation, ADA, bicycle facility	Not funded	2018/19	$1,000
H & I Street Corridors	ST	X	X	X	X	X	X	Road rehab, ADA, bicycle facility and bus pullouts	Planning Study funded ($110K Sust. Comm Grant)	2019/20	$2,110
Citywide	LT				X	X	X	Improve transit stop pullouts	Not funded	2024/25	$610
Walnut Drive at Hemlock Street	LT				X	X	X	Traffic signalization	Not funded	2023/24	$360
Citywide	LT			X	X	X	X	Bicycle facilities per Humboldt Regional Bicycle Plan 2012	Not funded	2023/24	$3,870
Citywide	LT		X	X		X	X	Ped improvements per *Humboldt Regional Pedestrian Plan 2008*, and other reports	Not funded	2023/24	$1,000
										Eureka ST Subtotal	**$14,457**
										Eureka LT Subtotal *Subtotal = $22,482*	**$8,025**

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF FERNDALE											
Rose Avenue/Herbert Street – East City limits to Main Street	ST	X					X	Class II bike path	Not funded	2019	$24
5th Street: Van Ness Ave to Ocean Ave	ST	X					X	Class II bike path	Not funded	2019	$15
Arlington Avenue - 5th Street to Main St	ST	X					X	Class II bike path	Not funded	2019	$20
Ocean Ave - West City limits to East City limits	ST	X					X	Class II bike path	Not funded	2019	$22
Wildcat Road - Ocean Avenue to south City limits	ST	X					X	Class III bike path	Not funded	TBD	$1
Main Street: Ocean Avenue to north City limits	ST	X					X	Class III bike path	Not funded	TBD	$38
Van Ness Avenue: 5th Street to Main St	ST	X					X	Class III bike path	Not funded	TBD	$1
Shaw Avenue: Ocean Avenue to Berding	ST	X					X	Class III bike path	Not funded	TBD	$37
Ocean Avenue: Strawberry Lane heading east towards trailhead	ST	X	X	X			X	Multipurpose trail (Class 1 bike path)	Not funded	2018	$36
5th Street: Van Ness to Ocean Avenue	ST	X	X	X			X	Multipurpose trail (Class 1 bike path)	Not funded	2018	$174
Lincoln Street - Grant Avenue to East City limits	ST	X	X	X			X	Multipurpose trail (Class 1 bike path)	Not funded	2018	$12
Ocean Avenue - Craig Street to Russ Park trailhead	ST	X	X				X	New sidewalk	Not funded	TBD	$98
5th Street - Arlington Avenue to Fairview North and piece on Arlington Avenue	ST	X	X				X	Curb and gutter and new sidewalk	Not funded	TBD	$54
Berding Street-Rose Avenue to Lewis St	ST	X	X				X	New sidewalk (Ped 2)	STIP/TE	TBD	$50
Rose Avenue - Berding to Herbert Street	ST	X	X				X	New sidewalk (Ped 2)	STIP/TE	TBD	$147
Main Street - North City limits to Arlington Avenue; citywide	ST	X	X				X	Misc. ADA improvements	Not funded	TBD	$150
Main Street - Arlington Avenue to Ocean Avenue (Caltrans)	ST	X	X				X	Misc. ADA improvements		TBD	$600
Francis Street - Ocean Avenue to Ferndale Public Works Building	ST	X	X			X		Roadway rehabilitation	Not funded	TBD	$80
Berding Street - Herbert Street to Eugene	ST	X	X			X		Roadway rehabilitation	Not funded	TBD	$1,400
										Ferndale ST Subtotal	***$2,959***
										Ferndale LT Subtotal *Subtotal = $2,959*	***$0***

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF FORTUNA											
Rohnerville Road: Newell St. to Redwood Way	ST	X	X	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	X	X	Overlay w/ bike lane improvements	Not funded	2021/2022	$2,000
Redwood Way: Fortuna Blvd to Rohnerville Road	ST	X	X	X	X	X	X	Overlay w/ pedestrian and bike lane improvements	Not funded	2017/18	$2,025
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	Not funded	2022/2023	$6,500
South Fortuna Boulevard/Ross Hill Road/Kenmar Road	ST	X	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	X	X			Install roundabout	Not Funded	2025/2026	$660
Newburg Road, Lawndale Drive, Summer Street, 2nd Ave, Orchard Lane	ST	X						New sidewalk, bike lanes and school entry improvements	ATP/SR2S	2017/2018	$900
Various locations: Riverwalk Drive, Fortuna Boulevard, Rohnerville Road	ST	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
										Fortuna ST Subtotal	***$47,785***
										Fortuna LT Subtotal *Subtotal = $47,785*	***$0***

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF RIO DELL											
Wildwood Avenue from Eagle Prairie Bridge to Davis Street	ST	X	X	X		X	X	Transportation enhancement project adding raised center median and striped bike lanes	State Transp. Enhancement	TBD	$589
Wildwood Avenue at Center Street and Davis Street Safe Routes to School	ST	X	X	X				Traffic calming on Davis Street, including curb extensions, crosswalks and sidewalks. Lighted pedestrian crossing across Wildwood Ave.	State Safe Routes to Schools, ATP	TBD	$152
Wildwood Avenue, Elko St to Belleview Avenue	ST	X	X		X	X	X	Class III bike lanes including striping and signage	Not funded	TBD	$35
Rigby Ave, Davis Street to Center Street	ST	X	X	X			X	Maintenance paving and bike improvements, Class II bike lane, centerline stripe	Not funded	TBD	$104
Wildwood Avenue at intersection with Hwy 101 off- ramp	ST		X	X		X	X	Realign southbound off-ramp and replace pavement between Caltrans paving project and City project on Wildwood Ave	Not funded	TBD	$135
Davis Street, Between Wildwood Avenue and Rigby Avenue	ST	X	X	X			X	Pedestrian/bike improvements, narrow crossing distance at Hwy 101 on-ramp. Class II bike lanes from Rigby Ave. to Ireland St. Class III bikes lanes from Ireland St. to Wildwood Ave	Not funded	TBD	$53
1st Avenue and 2nd Avenue, from Elko Street to Columbus Street	ST		X					Signage and striping to accommodate emergency response vehicles	Not funded	TBD	$44
Belleview Avenue, Wildwood Avenue to River Street	ST	X	X				X	Class II bike lanes, signage and centerline striping	Not funded	TBD	$69
2nd Avenue., Davis Street to Columbus Street	ST		X	X				Maintenance paving project including 2" overlay and striping	Not funded	TBD	$106
Ogle Avenue, River Street to Creek Street	ST	X	X	X	X		X	Road reconstruction and drainage improvements	Not funded	TBD	$3,303
Monument Road, Dinsmore Ranch Road to Redwood Lane	ST				X		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	X				Maintenance paving project including 2" overlay and striping	Not funded	TBD	$156
Northwestern Ave, east entrance to Eel River Industries to cul-de-sac at Humboldt Co right-of-way	ST	X	X		X	X		Centerline and edge striping, centerline monument	Not funded	2017/18	$55
Ireland Ave., Davis St. to Painter Street and Dixie Street, 4th Avenue to Davis	ST	X	X	X	X		X	Maintenance paving (2" overlay), striping, and bikeway signage	Not funded	2017/18	$19

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
City of Rio Dell (cont'd)											
Monument Road at Dinsmore Ranch Road	ST		X	X	X			Replacement of a failing timber post retaining wall	Not funded	2019/20	$234
Belleview Avenue, Spring Street to 300 ft east and 750 ft east of Creek Street to 100 ft west of Creek Street	ST	X	X	X				Maintenance paving project, including 2" overlay and striping.	Not funded	2019/20	$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	ST			X				Maintenance paving project, including 2" overlay and striping.	Not funded	2019/20	$109
W. Painter Street–Pacific Ave to 50' west of Rio Dell Ave; Butcher Street–Pacific Ave to Rio Dell Ave; Rio Dell Avenue– W. Center St to Townsend St; W. Townsend Street–Rio Dell Ave to Pacific Ave	ST			X				Maintenance paving project, including 2" overlay and striping	Not funded	2019/20	$95
Davis Street, Gunnerson Lane to Edwards Drive and Edwards Drive from Water Treatment Plant to Davis Street	ST	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	2021/22	$246
Scenic Way at Eeloa Avenue	ST	X	X	X	X		X	Reconfigure intersection to improve pedestrian and bicyclist safety	Not funded	2023/24	$572
Eel River bar, Davis Street to Eeloa Avenue	LT	X				X	X	Class I bike and pedestrian path along Eel River bar, including two trailheads	Not funded	2025/26	$947
Railroad ROW, Eagle Prairie Bridge to Northwestern Avenue	LT	X		X		X	X	Class I bike and pedestrian path next to railroad tracks	Not funded	2027/28	$2,394
										Rio Dell ST Subtotal	***$6,337***
										Rio Dell LT Subtotal *Subtotal = $9,678*	***$3,341***

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CITY OF TRINIDAD											
Van Wycke Street Trail	ST	X	X	X	X		X	Class I, II, & III bike, walkways, signage and striping	ATP	2018/19	$714
Trinity Street	ST	X	X	X			X	Sidewalks, driveways & curb ramps	Not funded	2022/23	$438
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		X	X	Pedestrian & connectivity improvements: sidewalks, driveways & curb ramps, crosswalks, signage, striping, and pavement repair (ADA). (1,200 feet ped/bike facilities)	RTIP	2018/19	$580
Patrick's Point Drive	ST		X			X		Overlay/maintenance paving	Not funded	2025/26	$161
Main St, Trinity St, Westhaven Dr	LT		X			X		Overlay/ maintenance paving	Not funded	2026/27	$732
Edwards Street	LT		X			X		Overlay/ maintenance paving	Not funded	2028/29	$575
Frontage Road	LT					X		Overlay/ maintenance paving	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			X	Sidewalks, driveways & curb ramps	Not funded	2032/33	$801
Edwards Street	ST	X	X	X	X	X	X	Retaining wall	Not funded	TBD	$1,500
										Trinidad ST Subtotal	***$3,048***
										Trinidad LT Subtotal *Subtotal = $10,092*	***$7,044***

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: COUNTY OF HUMBOLDT											
Honeydew Bridge	ST	X	X	X	X	X	X	Replace existing bridge	HBP	2017	$6,600
Central Avenue	ST	X		X	X	X	X	Shoulder widening & overlay	Not funded	TBD	$900
Harris & Hall	ST	X			X		X	Safety improvements	Not funded	TBD	$500
Herrick & Elk River Intersection	LT	X	X	X	X	X	X	Signalize	Not funded	TBD	$1,500
Fairfield, Meyer, Eureka	LT	X	X	X	X	X	X	Route improvement	Not funded	TBD	$1,000
McKinleyville Avenue Extension	ST	X	X	X	X		X	Connect to School Road	Not funded	TBD	$1,500
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	X	Reconstruct roadway from SR 255 to Humboldt Bay	Not funded	TBD	$1,500
Myrtle Ave. at Freshwater Road	ST	X		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	X		X	Synchronize traffic signals	Not funded	TBD	$1,800
Hammond Trail Bridge–Mad River	ST	X		X	X	X	X	Replace existing bridge	Not funded	TBD	$6,400
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 (1,800 in 2017)
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	$2,000
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 South (Eureka to Bracut segment)	ST	X	X	X	X			Rail with Trail Class I multi-use trail	Not funded	TBD	$12,000
Humboldt Bay Trail: Elk River to King Salmon	LT	X		X	X		X	Construct Class I multi-use trail	Not funded	TBD	$1,800
Humboldt Bay Trail: King Salmon to Fields Landing	LT	X		X	X		X	Construct Class I multi-use trail	Not funded	TBD	$1,400
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	$2,400
Humboldt Hill to Thompkins Hill	LT	X	X	X	X		X	Connector road	Not funded	TBD	$2,000
Harris to Fern Street, Cutten	LT	X	X	X	X		X	Connector road	Not funded	TBD	$2,000
Alderpoint/Mattole/Maple Creek	LT		X	X	X	X	X	Reconstruct rural routes	Not funded	TBD	$100,000

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
County of Humboldt (cont'd)											
Bell Springs Road	LT		X	X	X	X	X	Improve with Mendocino County	Not funded	TBD	$10,000
Briceland/Shelter Cove Roads	LT		X	X	X	X	X	Reconstruction/safety improvements	Not funded	TBD	$10,000
Fern Street, Cutten	LT	X	X	X	X		X	Complete connection	Not funded	TBD	$1,000
Garberville downtown	ST	X	X		X	X	X	Vehicle, pedestrian and bicycle improvements	Not funded	TBD	$2,000
Hoopa Downtown Corridor Project	ST	X			X	X	X	Context sensitive modifications (County portion only)	Not funded	TBD	$500
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	Shoulders	Not funded	TBD	$750
Central Avenue/Bella Vista	LT	X	X				X	Intersection improvements–shoulder widening and striping	Not funded	TBD	$300
Myrtle Avenue, Freshwater Rd to Pigeon Point Rd	LT	X	X	X	X	X	X	Shoulder widening	Not funded	TBD	$2,000
Myrtle Avenue, Ryan Slough to Freshwater Rd.	LT	X	X	X	X	X	X	Reconstruction	Not funded	TBD	$5,000
Rohnerville Airport to Hwy 36	LT	X	X	X	X	X	X	New road	Not funded	TBD	$5,000
Redwood Drive	LT	X	X	X			X	Pedestrian improvements	Not funded	TBD	$2,500
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
Airport Road (at Redwood Coast/Arcata-Eureka Airport)	LT	X		X	X		X	Install sidewalk	Not funded	TBD	$380
									Humboldt County ST Subtotal		***$38,260***
									Humboldt County LT Subtotal *Subtotal = $213,890*		***$175,630***

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: HOOPA VALLEY TRIBAL ROADS DEPARTMENT											
SR 96	ST	X	X		X		X	Downtown traffic calming & safety enhancements	Partially funded	2017-18	$4,400
SR 96	ST					X	X	Reservation-wide safety enhancements; SR2S & pedestrian walkways	Not funded	2014-20	$12,500
SR96, Trinity River Bridge	ST	X	X				X	Safety enhancement; cantilevered walkway	Not funded	2015-25	$12,500
Bair Ranch Road, Humboldt County Road	ST				X	X		Reconstruction of roadway for emergency access	Not funded	2015-20	$750
On SR96 at Blue Slide	LT		X		X	X		New bridge crossing the Trinity River to K'ima:w Medical Center	Not funded	2020-35	$45,000
Tish Tang Road from SR 96 to Medical Center & Hoopa Airport	LT		X		X	X	X	Reconstruct Tish-tang (county road)	Not funded	2020-35	$6,500
										Hoopa ST Subtotal	***$30,150***
										Hoopa LT Subtotal *Subtotal = 81,650*	***$51,500***
Agency: 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	2016-20	$1,100
Karuk Tribe/Caltrans: Tishawniik Hill, Camp Creek Rd to Asip Rd	ST	X	X	X	X	X	X	Class I trail (detour project) and Class II bikeway	FHWA TTP Safety funds	2021/22	$1,400
										Karuk Tribe ST Subtotal	***$2,500***
										Karuk Tribe LT Subtotal *Subtotal = 2,500*	***$0***
Agency: TRINIDAD RANCHERIA											
US 101/Trinidad, HUM 101-98.4/100.7 and Char-Ae Lane	ST	X	X	X	X	X	X	New interchange with local connections to Scenic Drive and Westhaven Drive, with pedestrian access	FHWA TTP funds, STIP, grants	TBD	$30,000
										Trinidad Rancheria ST Subtotal	***$30,000***
										Trinidad Rancheria LT Subtotal *Subtotal = 30,000*	***$0***

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Agency: CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 1											
101 Corridor Improvement Project	ST	X	X	X	X	X	X	Safety improvements at uncontrolled intersections	RTIP ($8,380) and ITIP ($15,000)	2020/21	$43,380
U.S. 101 / Broadway, Kmart to O Street	ST	X				X	X	ADA curb returns and ramp upgrades	2016 SHOPP	2019/20	$3,000
299 – near Willow Creek on Cedar Creek Road	ST				X	X	X	Cedar Gap curve improvement	2014 SHOPP	2017 in construction	$1,000
299 – near Willow Creek near Redwood Creek Bridge	ST				X	X	X	Sabertooth shoulder widening	2016 SHOPP	2017 in construction	$2,000
299 – near Willow Creek near Chezem Road	ST				X	X	X	Circle Point curve improvement	2014 SHOPP	2017 in construction	$4,000
299 – near Blue Lake, Chezem Road	ST				X	X	X	Lupton curve improvement	2015 SHOPP	2017 in construction	$2,000
299-Near Blue Lake to 0.2m W of the Route 96 Junction	ST				X		X	Grind-in rumble strips installation	2012 SHOPP	2017	$21,000
96 – near Willow Creek near the Tish-Tang Campground	ST				X	X	X	Sugar Bowl Ranch curve improvement	2012 SHOPP	2017 in construction	$3,000
96 – near Willow Creek near Shoemaker Road	ST				X	X	X	Hoopa Vista Point curve correction	2012 SHOPP	2017 in construction	$2,000
169 – east of Pecwan near Junction of Highways 96 /169	ST				X	X	X	Weitchepec curve improvement	2016 SHOPP	2019/20	$1,000
254 – various Locations	ST				X	X	X	Avenue of the Giants–Four Bridges Project	SHOPP	2016	$3,000
96 – Trinity River Bridge in Downtown Hoopa	ST	X	X	X	X	X	X	Pedestrian and non-motorized vehicle crossing of Trinity River (Bike & ped improvements)	SHOPP (PID)	TBD	$1,000
101 – intersection of Broadway, Wabash and Hawthorne	ST	X	X		X	X	X	Intersection control evaluation	SHOPP (PID)	2018/19	$3,000
101 – Eureka on 4th and 5th Streets from Broadway to Eureka Slough Bridge	ST	X	X		X	X	X	Eureka capital preventative maintenance	SHOPP (PID)	2018/19	$2,800
96 – 6.2m E of Willow Creek to 2.6m W of Tish-Tang Campground	ST				X	X	X	Correct curve, shoulder widen, rumble strip, restripe, open graded friction course	SHOPP	2017 in construction	$3,700
101 and 254 - various locations	ST				X		X	Upgrade guardrail and bridge approach	SHOPP	TBD	$4,000
101 Corridor Improvement Project	ST	X			X			Extend acceleration/deceleration lanes	SHOPP	2019/20	$6,400
101 – near Arcata at Jacoby Creek & Gannon Slough Bridges	ST	X		X	X	X		Bridge rail replacement/upgrade	SHOPP	2019	$3,900

COMPLETE STREETS Project Location	Short or Long Term[1]	Complete Sts	Economic	Environment	Operations	Preserve Sys	Safety	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Caltrans District 1 (cont'd)											
101 – in Eureka from Elk River Bridge to Pierson/Tetrault signal	ST	X						Eureka South Entry Gateway Project	STIP (RTIP)	PID	$2,000
101 – Eureka from 15th St to 6th St	ST	X			X			ADA sidewalks and curbs	ADA	PID	$3,900
36 -near Hydesville at River Bar Road	ST				X	X	X	Alton shoulder widening	SHOPP	2019/20	$9,900
36 – near Dinsmore various locations	ST				X		X	Little Buck safety improvements	SHOPP (Safety)	2016/17	$7,700
299 – Near Blue Lake/Simpson Rd	ST	X			X			Widen shoulders and install rumble stripes	SHOPP	PID	$1,000
299 – from Chezem Road to Cedar Creek Road	ST	X			X			Widen shoulders and install rumble stripes	SHOPP	PID	$5,700
299 – near Willow Creek from Cedar Road to SR 96	ST	X			X			Widen shoulders and install rumble stripes	SHOPP	PID	$7,600
299 - in Willow Creek from Willow Way Road to Panther Rd	ST	X			X			Widen shoulders	SHOPP	PID	$1,000
101- through the community of Orick	LT	X	X		X		X	Streetscape improvements to enhance bicycle and pedestrian safety	Not funded	NA	$1,400
96 - through the community of Orleans	LT	X	X		X		X	Streetscape improvements to enhance bicycle and pedestrian safety	Not funded	NA	$1,800
255 – through the community of Manila	LT	X	X	X	X		X	Streetscape improvements to enhance bicycle and pedestrian safety	Not funded	NA	$2,200
										Caltrans ST Subtotal	***$148,980***
										Caltrans LT Subtotal	***$5,400***
										ALL REGIONAL COMPLETE STREETS PROJECTS – Funded (constrained) Subtotal	**$174,485**
										ALL REGIONAL COMPLETE STREETS PROJECTS – Not funded (unconstrained) Subtotal	**$395,497**
										TOTAL	**$569,982**

[1]*Short-term (ST) is the next 1 to 10 years; long-term (LT) is the next 11 to 20 years.* [2]*Assume 2% annual inflation.*

PERFORMANCE MEASURES

Transportation performance measures consist of a set of objectives and measurable criteria used to evaluate the effectiveness of the transportation system. Performance measures 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 Measures for the Regional Complete Streets System

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Safety	*Collision rates* *Bicycle & pedestrian activity and 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.
	SAFE Program (Service Authority for Freeway Emergencies)	Are SAFE call boxes located at appropriate distances along designated corridors?	• Percentage of fully operational call boxes. • Percentage of call box locations that meet all design criteria. • Annual call box use.	Call box monitoring/ performance reports.
Balanced Mode Shares (Complete Streets)	*Mobility* *Reliability*	Have transportation projects increased multi-modal options in the region? Has congestion decreased? Has travel time decreased for passengers, freight/goods trips?	• Travel mode split (shares) for work trips. • Travel mode split (shares) for non-work trips. • Annual average delay per mile of roadway segment (per passenger, automobile, freight truck trips). • Peak hour congestion.	U.S. Census, American Community Survey.
	Connectivity	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.

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
	Access to transit, paratransit	Has the level of transit or paratransit service increased? Have ridership levels increased? Has number of interregional transit routes or schedules increased?	• Total transit/paratransit trips. • Percentage of population within ¼ mile of a transit stop. • Major destinations not accessible by transit/paratransit. • Revenue service hours/miles.	Transit Development Plan updates, Local transit operators' data.
	Access to walking & bicycling	Have walking and bicycle mode shares increased?	• Bicycle ridership (mode share). • Pedestrian travel (mode share).	Surveys, pedestrian and bicycle ridership counts.
	Performance	Has the level of service (LOS) increased for alternative modes?	• Average annual boardings per transit vehicle revenue hour or mile. • On-time performance of transit system. • Pedestrian LOS/QOS. • Bicycle LOS/QOS. • Percentage of sidewalks, intersections, and bus shelters that comply with ADA requirements.	Local transit operators' data, LOS/QOS results.
Efficient and Viable Transportation System	*System condition* *System preservation*	Are roads better maintained? Do road, aviation, and maritime facilities meet standards for state of good repair? Is the road maintenance or rehabilitation backlog decreasing? Is the bridge or pier replacement or rehabilitation backlog decreasing?	• Pavement Condition Index (PCI) rating. • Condition of bridges, harbor and aviation facilities. • Maintenance/rehabilitation funding shortfalls.	Public Works Depts, Caltrans District 1, Harbor District, 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? Have system operating and maintenance costs decreased?	Per one thousand dollars invested: • Decreased collisions and fatalities. • Decrease in system-operating cost. • Increased frequency and reliability of transit. • Decrease in air pollution emissions. • Decrease in freight travel time. • Decrease in freight system maintenance costs. • Improved access to jobs, school, commerce, and services. • Increase in trips by alternative modes.	Caltrans, Air Resources Board, Public Works Depts.

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Environmental Stewardship & Climate Protection	*Fuel and energy use*	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.
	Air quality	Have air pollutant emissions decreased from on-road mobile sources?	• $PM_{2.5}$, PM_{10} emissions. • Air quality levels.	CARB, local and state environmental and compliance reporting.
	Adaptability and resilience to climate change impacts	Have transportation CO_2 emissions decreased per capita? Have car/light truck VMT decreased? Have alternatives to driving alone increased?	• Total transportation CO_2 per capita. • Passenger 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	*Equity* *Environmental justice*	Has the proportion of transportation investment in environmental justice tracts increased?	• Percentage of RTP/RTIP expenditures in environmental justice tracts. • 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
	Transportation coordinated with land use	Has new transportation infrastructure developed agricultural or natural resource land? Is transportation planned for new land development (residential, work, commercial, services, recreation)?	• Acres of sensitive lands on which transportation infrastructure is built. • 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	*Economic sustainability*	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 mile of public transit.	
	Goods/freight movement	Has the freight network been enhanced?	• Freight capacity acreage (for ports of entry) • Freight capacity mileage (highway connectors to port terminals, highway truck routes)	

3. COMMUTER TRAILS ELEMENT

Trails are made in a variety shapes, textures, and places. There are a variety of trails which accommodates a variety of uses, as depicted by terms such as hiking trail, walking trail, mountain bike trail, multi-use trail, cross-country ski trail, rail trail, etc. The Trails Element describes Humboldt's existing, planned, and desired regional trails network in the context of a regional transportation system. For the purposes of the Regional Transportation Plan, we focus on trails used for transportation, meaning trails used to travel from one destination to another. We do not cover recreational trails if they are not used for transportation.[1] In the Commuter Trails Element we are focusing on regional trails, meaning those that link destinations not just within but between communities. 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 relies specifically on three adopted HCAOG plans:

- *Humboldt County Regional Trails Master Plan* (HCAOG, 2010)
- *Humboldt County Regional Pedestrian Plan* (HCAOG, 2008)
- *Humboldt Regional Bicycle Plan* (HCAOG, 2017 pending)

These adopted HCAOG plans are incorporated, by reference, into *VROOM*. Thus, their adopted policies and projects that pertain to regional trails, for transportation, are incorporated into this Element.

Other important planning documents to refer to for existing conditions, supporting policies, priority projects, and implementation actions include (but are not limited to):

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

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

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

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

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. Nearly half complete, the CCT is currently comprised of discontinuous segments along the coastline. When completed, the CCT will extend the length of California's 1,200 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. For example, trail segments on the highway, or where the trail detours inland from the coast to avoid private lands.

Improvements Needed to Complete the Coastal Trail (estimated linear mileage)

	Highway corridor improvements	Acquisition/construction on private lands	Construction on public lands	Current improvements adequate	Total CCT miles
Statewide	245	269	245	548	1,307
Humboldt	3	50	9	92	154

Source: http://californiacoastaltrail.info/cms/pages/trail/done.html, accessed February, 2017.

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 is envisioned to run the length of the city's bayfront, from Tydd Street (near the Eureka Slough) to Herrick Avenue at the Pound Road Park-and-Ride. Some segments of the trail are already in place: Eureka Slough trail (bayside of the Target Store), the trail near the Adorni Center, the Old Town Boardwalk, PALCO Marsh trail, and the 1.5-mile multi-use Hikshari' Trail in south Eureka's Elk River Access Area. Hikshari' is the Wiyot place name for this coastal area west of Broadway Street where the Elk River flows into Humboldt Bay. The City of Eureka completed "Phase A," in December 2016, which extends the trail north from the Hikshari' Trail, adding Class I multi-use trail from Truesdale to Del Norte Street. Phase B, from Del Norte to C Street, and Phase C, from Halvorsen Trail to Tydd Street, will be constructed in 2017. Existing segments of the Waterfront Trail are part of the Pacific Coast Bicycle Route.

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.[2]

Caltrans: Caltrans will be implementing a large-scale wetland mitigation

[2] Source: County of Humboldt, *State of the Trails Report*, June, 2016.

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. They are working on the engineering and permitting phases. This project will take several years to complete due to right-of-way and environmental characteristics and other complexities of the site.

City of Eureka—*Eureka Waterfront Trail*: The City of Eureka completed constructing Phase A in 2016 (from Hikshari' Trail at Truesdale Street north to Del Norte Street), and in 2017 constructed Phases B (Del Norte Street north to C Street) and C (a 600' boardwalk near Eureka slough).

City of Eureka - Eureka Waterfront Trail

The *Regional Trails Master Plan* describes the local trail networks within the jurisdictions of the seven cities and County, and within territories/communities of the Hoopa Valley, Karuk, Wiyot and Yurok Tribes, and the Blue Lake and Trinidad Rancherias.

Proposed and existing Class I regional commuter multi-use trails are mapped on Figure 3.1 (see Maps Tab).

GOAL: Humboldt's trail network is regionally and locally connected and gives people options countywide for safe, active transportation.

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.

GOAL, OBJECTIVES, & POLICIES

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

- Balanced Mode Share/Complete Streets
- Economic Vitality
- Efficient & Viable Transportation System (includes Preserving Assets)
- Environmental Stewardship & Climate Protection
- Equitable & Sustainable Use of Resources
- Safety

The Commuter Trails Element's policies are derived, in part, from the goals, objectives, and policies adopted in the *Humboldt County Regional Trails Master Plan (2010)*, *Humboldt County Regional Pedestrian Plan (2008), and Humboldt Regional Bicycle Plan (2017).*

OBJECTIVE: BALANCED MODE SHARE/COMPLETE STREETS

Policy Trails-1 HCAOG shall coordinate and support local jurisdictions in developing a regional trails network. HCAOG shall support lead agencies in completing a contiguous California Coastal Trail (CCT) in Humboldt County. HCAOG supports implementing "Complete Streets" projects and policies for the CCT along the shoreline of Humboldt's coastal communities. *(Also supports objective: Economic Vitality, Equitable & Sustainable Use of Resources)*

Policy Trails-2 HCAOG shall pursue, and help member entities pursue, active transportation system funding to implement priority trail projects identified in the Commuter Trail Element and the *Humboldt County Regional Trails Master Plan. (Also supports objectives: Balanced Modes Share/Complete Streets*, *Economic Vitality)*

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Policy Trails-3 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. *(Also supports objectives: Environmental Stewardship, Equitable & Sustainable Use of Resources.)*

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP & CLIMATE PROTECTION

Policy Trails-4 HCAOG shall support entities to design and locate regional trails to minimize impacts to environmentally sensitive habitat areas and prime agriculture lands to the maximum extent feasible. (*Also supports objectives: Efficient & Viable System, Equitable & Sustainable Use of Resources*)

Policy Trails-5 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. (*Also supports objectives: Efficient & Viable System)*

[3] The objectives are described in more detail in Chapter 1, Introduction.

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Policy Trails-6 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. (*Also supports objectives: Balanced Mode Share/Complete Streets, Efficient & Viable System, Environmental Stewardship*)

Policy Trails-7 The regional trails network shall provide travel options for residents and visitors, with equitable access for transportation-disadvantaged populations. (*Also supports objectives: Balanced Mode Share.)*

OBJECTIVE: SAFETY

Policy Trails-8 HCAOG will prioritize planning, design, construction, adequate maintenance, and other actions to improve the safety of the regional trails system. *(Also supports objective: Efficient & Viable 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* states:

> HCAOG funded this plan in response to a growing and intensified interest on the part of Humboldt County residents for enhance 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.

In late 2012, the North Coast Railroad Authority (NCRA) held a series of public meetings to facilitate a community discussion and dialogue regarding rail and trail development in Humboldt County. From that process, the NCRA adopted Findings and Recommendations, which included the finding that, "There is tremendous community support for rail and trail development in the Humboldt Bay rail corridor, particularly the reach between Eureka and Arcata" (NCRA Resolution No. 2012-13, December 12, 2012). That reach has been a regional trail priority for at least a decade, and the concept for the Humboldt Bay Trail now envisioned would connect from Scotia to Trinidad, and from Arcata to Blue Lake along the future Annie & Mary Trail. The ad-hoc 101 Corridor-Bay Trail Committee has been meeting regularly since 2014 to assess needs, plan collaboratively, and coordinate building the trail. HCAOG facilitates the Committee's meetings.

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 plan.

Table *Trails-1*. Regional Commuter Trail Projects

Trail Project	Jurisdiction	Description	In Other HCAOG Adopted 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
California Coastal Trail	HCAOG	• 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 Waterfront Trail*	Eureka	From Tydd Street to Herrick Avenue, including existing segments of trail in Halvorsen Park and along the existing Eureka Boardwalk. The segments still to be built and/or upgraded are Phase B (Del Norte St. to C St.) and Phase C (Halvorsen Park Trail to Tydd Street).	HCCTIS (Priority Project), RTMP
Hammond Trail	Arcata, Eureka, 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

(Continued on next page)

Trail Project	Jurisdiction	Description	In Other HCAOG Adopted Plan(s)[1]:
Humboldt Bay Trail North and South*	Arcata, Humboldt County	Arcata to Eureka Segment: A 6.5-mile Class I/multi-use path around the east side of Humboldt Bay, 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 (Continuation)*	Humboldt County	This would continue the Class I/multi-use path from Humboldt Bay Trail South Trail further 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.	*new in 2017 RTP Update*
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
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
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
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.	

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 2001 *Humboldt Bay Trail Feasibility Study.*

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

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)

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)

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 as follows: 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.

> "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 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.

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 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 and Tolowa Dee-ni Nation in Del Norte County.

The NCTTC mission statement 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

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 includes 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 the Department to consult with tribal Governments before deciding on or implementing projects/programs that may impact their communities. The Department's intent is to "recognize and respect important California Native American rights, sites, traditions and practices" (Director's Policy 19). HCAOG's intent is to uphold the same objectives to recognize, respect, and collaborate with Native American tribal governments and communities.

> "Work with tribal governments using principles of coordination, collaboration, and engagement to improve transportation for tribal communities."
> – California Transportation Plan 2040

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 Tribe, Karuk Tribe, Trinidad Rancheria, and the Yurok Tribe.

The HCAOG TAC emphasizes providing 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" as well as to "[consult] with tribal Governments prior to making decisions, taking actions or implementing programs that may impact their communities (Director's Policy 19, "Working with Native American Communities" 2001). HCAOG also commits to following this edict, within its authority, to the best of its ability.

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 tribes 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 Bear River Drive residential homes, the tribe's wastewater sewage plant, the tribe's water treatment plant, and renewable energy windmills and 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.

Public transit was established in July 2015 to the community with the addition of two bus stops on the Rancheria property. The public transit service is operated by the Humboldt Transit Authority (Redwood Transit System) and resulted from the region's annual unmet transit needs process. The tribe currently does not operate public transit services; however it does provide limited transportation services available to Bear River tribal members for medical appointments.

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

Transportation Projects – Completed

Completed road safety projects include adding a light-emitting diode (LED) crosswalk connecting our two parcels of trust land across Singley Road (county road). Additional street lighting was added both in the residential area and the services area. Additional speed control (speed humps) were added in both the residential area and the services area. Additional sidewalk was added in the residential area

allowing tribal members to walk both sides of the street safely, and travel from the residential area to the services area. Traffic flow controls were added at our Pump-N-Play gas station to improve safety at the intersection of Singley Road and Bear River Drive.

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:

- Adding sidewalks and bicycle lanes to promote walkability on the Rancheria for pedestrian safety and healthy living;
- Adding dedicated industrial truck routes to separate commercial and retail traffic;
- Improving intersections to increase safety;
- potentially integrating sidewalks, bicycle lanes, and/or roads with the proposed Annie & Mary Rail Trail;
- Increasing river access along the Mad River for recreational opportunities;
- Installing tribal street signs for ease of travel on the Rancheria;
- Installing more street lights to improve safety;
- Installing bicycle parking facilities on the Rancheria
- Coordinating with the City of Blue Lake to improve routes to school and pedestrian facilities between the Rancheria and City of Blue Lake;
- Expanding the frequency and/or service area(s) for all BLRTS 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 Hoopa Valley Tribe's comprehensive, long-term transportation goals and plans to the year 2015 were outlined in the *Hoopa Valley Indian Reservation Long Range Transportation Plan* (Hoopa 2008). The Hoopa Valley Tribe is in the process of updating their existing long range transportation plan and will have a final draft in FY 2018.

The following projects are tribal priorities and are recommended for the Hoopa Valley Indian Reservation Transportation Improvement Program (TIP) under the Map 21 funding cycle. The Hoopa Valley Tribe is still in the planning process for developing the Transportation Improvement Priorities for FY 2016 to FY 2020 under the FAST Act.

The following projects, identified in the FY 2013-2015 priorities, are scheduled to begin in FY 2018:

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 road repair (sites 4, 5, and 6, BIA Route 11)
5. Bald Hill emergency access/exist widening improvements (BIA Route 11)
6. Hoopa Airport improvements—In progress in 2017
7. *Bair Ranch Road Emergency Access/Exist Widening Improvements (Humboldt County)—Completed 2016*
8. *Dowd Road Emergency Access/Exist Widening Improvements (BIA Route 18) —Completed 2016*
9. *Baldy Flat Road Improvements—Completed 2016*
10. Legion Way Road Improvements (drainage for downtown, grading & new aggregate surface)

The Hoopa Valley Tribe prepared the "Traffic Calming and Safety Enhancement in the Hoopa Valley Indian Reservation: A Conceptual Plan for 'Downtown' Hoopa" (January 2006) to guide pedestrian design in downtown Hoopa. The plan provides a blueprint for enhancing the pedestrian environment downtown, and improving pedestrian safety, in particular along SR 96. For example, pedestrian crosswalks and a pedestrian zone on Trinity River Bridge (SR 96) are a few of the safety improvements recommended in the plan. The 2008 STIP cycle funding has been programmed in FY 2013 and the Hoopa Valley Tribe and Caltrans have executed an agreement to begin the Preliminary Architecture and Environmental and Design Phase of the project. The PA&ED will be complete in the spring of 2018 and construction of the first phase for the Downtown Traffic Calming & Safety Enhancement Project will begin late summer 2018.

The following eight improvement projects have been re-evaluated as part of the *Hoopa Downtown Enhancement Conceptual Plan*, and are part of the Tribe's *2008 Long Range Transportation Plan*.

1. Tish Tang Road
2. Tsewenaldin Road
3. Hospital Road
4. KIDE Road
5. Post Office Lane
6. Storage Road
7. Retail Road
8. Bank Lane

The Hoopa Valley Reservation total backlog cost for roadway maintenance and rehabilitation needs is approximately $60,000 per mile (FY2015 road inventory listed 360 raw miles [Hoopa Valley Tribe 2016]).

The Hoopa Valley Indian Reservation declared a "State of Emergency" in January of 2017. Estimated damages were approximately $10 million. The Hoopa Valley Tribe is the first Tribe in the Nation to declare an emergency since the revision of the Stafford Act. The Hoopa Valley Tribe will be focused on repairing the transportation facilities that experienced over $3 million dollars in damages.

HCAOG short-term and long-term regional "complete streets" projects in the Hoopa Valley are listed in the Complete Streets Element; see Table *Streets*-4.

KARUK TRIBE

The Karuk Tribe is the second largest Tribe in California with 3,679 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 Element, Table *Streets-4*.

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. Although no specific funding source has yet to be determined, HCAOG and the Karuk Tribe have been approached and have given conceptual support for the project.

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. The Rancheria is comprised of three separate parcels that total 83 acres. The largest 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 contains Tribal Member Housing, Tribal Offices, a Tribal Library, and the Cher-Ae Heights Casino.

U.S. 101 bisects the Rancheria on the northeastern corner, which leaves a small nine-acre parcel 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. Twelve residential properties are located on the 27.5-acre parcel.

In addition to Rancheria property, the Trinidad Rancheria also owns the Trinidad Pier and Seascape Restaurant in the City of Trinidad. The Rancheria's property in Trinidad 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.

Transportation Projects – Proposed

The Rancheria is beginning the journey of planning and building infrastructure. 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 Interchange, stabilizing and rehabilitating Cher-Ae Lane, and the Wayfinding System Project (WSP).

U.S. 101 Interchange

The U.S. Highway 101 Interchange has been a vision and desire of the Trinidad Rancheria Community for years. Current access to the Rancheria is compromised due to the continuous failure of Scenic Drive. Scenic Drive is the only access to the Rancheria main parcel, which houses its tribal offices, private residences, and the Cher-Ae Heights Casino.

In 2012 the Rancheria Transportation Department began proceeded with the U.S. 101 Interchange project by helping with a traffic impact study. In 2015 the Rancheria formed a project delivery team (PDT), which consisted of Caltrans, FHWA, Bureau of Indian Affairs (BIA), HCAOG, Humboldt County Planning & Engineering Departments, Humboldt County Board of Supervisors, City of Trinidad. Ultimately, the PDT was able to quantify the necessity for the interchange and in 2016 began to work towards submitting the *Highway 101 Project Study Report* (PSR), which will identify alternatives to be studied in order to determine an appropriate solution to the defined transportation problem. The initial phase of the PSR includes biological and other environmental studies, alternative scenarios and multiple design exceptions for the interchange. The Rancheria is dedicated to maintaining an inclusive relationship with various stakeholder groups as the planning process unfolds.

Cher-Ae Lane Slope Stability

Cher-Ae Lane is the main route of access to the Trinidad Rancheria property providing access to the Rancheria tribal offices, Rancheria businesses, and private homes. The tribal offices provide services for all the Rancheria members, some of whom reside off the Rancheria property. Cher-Ae Lane also provides emergency access and access for school buses.

The slope along the northern side of Cher-Ae Lane has been sliding for some time, and earth movement has accelerated in recent years. A preliminary investigation of the slide (conducted in 2010 by SHN Consulting Engineers & Geologists Inc.) determined that a retaining structure must be constructed to stabilize the slope and keep the slide from continuing upslope. Current conditions pose maintenance and safety concerns. For instance, maintenance of this area has been limited as removal of the slide material at the toe of the slope will likely cause the slope failure further upslope.

Currently the slide material partially encroaches on the westbound traffic lane of Cher-Ae Lane. The encroachment presents a significant hazard to motorists as it may cause westbound traffic to drive in the eastbound lane in order to pass through. The westbound lane slopes steeply downhill at grades up to 12 percent, which increases the necessary stopping distance. The entrance to the Cher-Ae Heights Casino is less than one-hundred feet from the slide area. Overall the congestion of this area and steepness of the roadway increases the potential hazard of the slide. In the event of a catastrophic failure of the slide area, the roadway could be closed, which would cut off access to the Rancheria property by emergency vehicles and others.

Stabilization of the slope adjacent to Cher-Ae Lane is a critical step in ensuring, continued access to the Rancheria. If not repaired, and the status quo continues, wherein material reaching the road way is scraped off, the slope will continue to fail, and the affected area will expand upslope. It is likely that as the slide area increases, so would the rate of failure (especially if failed material is continually removed at the toe when it reaches the road). Eventually the migrating earth flow will encroach upon the community leach field.

Wayfinding System Project (WSP)

The WSP is the Rancheria's vision of implementing an effective transportation safety program to save lives while respecting Native American culture and tradition. Wayfinding is more than signage. Wayfinding is a vital safety tool that helps make safe connections by using the most cost-effective route to lower speed and increase safety. Wayfinding shall be used to guide people to their destinations safely by providing sufficient street lighting, clear directional information, and consistent addressing at all locations. Most importantly, signage will be consistent, easily readable, and unambiguous to direct traffic effectively, making drivers more aware of road conditions. Emergency responders, enforcement agencies and visitors unfamiliar with the Rancheria's parcels will be able to navigate their way, while the lives of the tribal community residing within the Rancheria will be enriched and enhanced, ultimately achieving safer social and cultural benefits.

This project is a comprehensive engineering improvement approach to reduce traffic accident fatalities and serious injuries across the 83 acres of the fragmented Trinidad Rancheria trust lands. The WSP will address transportation safety issues identified in the *Trinidad Rancheria 2014 Safety Plan*, the *2012 Trinidad Rancheria Road Safety Audit*, *Trinidad Rancheria Tribal Transportation Plan 2006-2026*, and California's *Strategic Highway Plan*. The Rancheria Transportation Department has fixed GIS data inconsistencies that resulted in errors in mapping physical addresses in the right locations. Such errors could potentially end up delaying emergency responders. The Rancheria Transportation Department has assessed all roadways, and is developing safe behavioral strategies that employ signage and traffic calming.

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.

Recent completed work to improve safety is the Klamath Boulevard Gateway Project which included traffic calming features, sidewalks, crosswalks, streetlights, bike lanes and landscaping to improve safety for motorists, pedestrians and bicyclists travelling through the Klamath town site.

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 estimated cost (in 2005 dollars) for roadway rehabilitation projects ranked by relative importance to the Yurok Tribe is $633,208,000. The top priority is the reconstruction of 20.1 miles of SR 169 at a cost of $205,720,000. The second highest priority project is the realignment and pavement of Bald Hills Road at a cost of $61,230,200. Another priority road project is widening SR 169 at Weitchpec. This is a Caltrans SHOPP project that has been several years in the process of completing the Plans Specifications & Engineering (PS&E) and completing construction.

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

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

HCAOG 2017 *Humboldt Regional Bicycle Plan Update 2017* (Draft pending)

Hoopa Valley Tribe 2008 *Hoopa Valley Indian Reservation Long Range Transportation Plan.* Prepared by Red Plains Professional, Inc. (October 2008.)

Hoopa Valley Tribe 2016 *Comprehensive Economic Development Strategy (CEDS) 2016-2020.* (Adopted on March 7, 2016.)

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. PUBLIC TRANSPORTATION ELEMENT

EXISTING TRANSIT SYSTEM

The "passenger transit mode" in Humboldt County is exclusively bus and van. There is no passenger rail, subway, or ferry service. 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.

Households near public transit drive an average of 4,400 fewer miles than households with no access to public transit. This equates to a household reduction of 223 gallons of gasoline per year.

– American Public Transportation Association, 2012

INTERREGIONAL TRANSIT

Interregional transit services move people into and out of Humboldt County. Two national services serve Humboldt County: Greyhound Bus Lines and Amtrak Thruway Motorcoach. The Greyhound schedule runs between Arcata (Intermodal Transit Center) and San Francisco; Greyhound connecting buses are available in Oakland and San Francisco. 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). Greyhound and Amtrak buses run seven days a week.

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.

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 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: 5.1a, 5.1b, 5.1c, and 5.1d (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 connects to two other transit services, potentially taking passengers from Arcata and Willow Creek to destinations further east/northeast. From Willow Creek, the Klamath-Trinity Non-emergency Transit (KT NeT) connects passengers to the Hoopa Reservation and Orleans, and to connections to eastern counties (described above in Interregional Transit).

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); and
- *Humboldt County Coordinated Public Transit–Human Services Transportation Plan* (HCAOG, 2016).

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	RTS	So. Hum Intercity	So. Hum Local	Tish Non-Village	Willow Creek	Eureka Transit	Arcata DAR/DAL
County of Humboldt	50.00%	100%	100%	100%	100%	27%	60%
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%	100%	100%

*Adopted by the HTA Board of Directors on June 20, 2012. HTA is a Joint Powers Authority (JPA).

HTA operates and maintains the Redwood Transit System (RTS), the Willow Creek Transit Service, and Southern Humboldt Intercity, Southern Humboldt Local, and the Tish Non-Village Transit

(TNVT). The HTA serves as the Consolidated Transportation Service Agency (CTSA) for Humboldt County (as of July 1, 2016), and in that capacity coordinate paratransit services. Also, under contract, HTA operates and maintains the Eureka Transit System, and provides paratransit (Dial-A-Ride and Dial-A-Lift) administrative services for the region.

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 seven days a week.

Southern Humboldt Intercity

HTA operates Southern Humboldt Intercity, which provides fixed route service between Garberville and Eureka with stops including Briceland/Redway Drive, Phillipsville, Miranda, Myers Flat, Weott, Fortuna, and College of the Redwoods. The Intercity system runs on weekdays during morning and afternoon peak-travel times.

Southern Humboldt Local

HTA operates the Southern Humboldt Local, which provides deviated fixed-route service in areas between Garberville and Miranda. Service runs during weekday peak-travel times (morning and afternoon).

Tish Non Village Transit

HTA operates the TNVT, which began service in July 2015. TNVT is a deviated fixed-route with stops at College of the Redwoods, Scenic and Loleta Drive, Tish Non-Village, Fernbridge, Palmer Boulevard, and Fortuna (11st & N Street). TVNT runs weekdays only.

Willow Creek Transit System

HTA also operates the fixed-route Willow Creek Transit System 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 has 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 (circa 2017-2018) 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.

Short-range Recommendation: Support technologies and capital improvements that increase convenience and competitiveness of public transit and rail, thereby making transit and rail preferred mode alternatives. This includes real-time transit information and trip planning tools, universal payment systems, as well as cost-effective infrastructure improvements optimizing reliability and connectivity between systems.

– California Transportation Plan 2040

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 to the call stop locations. The BLRTS service provides over 1,300 trips per month.

Klamath Trinity Non-Emergency Transportation (K-T NeT)

K-T NeT is a non-profit, community-based organization in the Klamath Trinity that began transit operations in January of 2003. K-T NeT's service area encompasses Willow Creek and areas north along Highway 96. K-T NeT provides fixed-route service and cannot provide door-to-door service. The service operates from 6 a.m. to 7 p.m. weekdays, between Willow Creek, Hoopa Valley, and Weitchpec. In addition, on Tuesdays and Wednesdays, the route expands service to Orleans. On Saturdays, service runs between Hoopa and Willow Creek in the morning (9:00 a.m. to 11:40 a.m.) and evening (6:15 p.m. to 6:45 p.m.).

KT-NeT's service between Hoopa and Willow Creek is funded with TDA funds from Humboldt County. The Hoopa-Orleans service is funded by an FTA grant for intercity bus programs (per FTA §5311f).

K-T NeT enables connections each weekday to two other bus services in the community of Willow Creek. One is a connection to the Willow Creek Transit bus (Willow Creek to Arcata). The second is a connection to Trinity Transit that serves communities in Trinity County including Weaverville. Flag stops are not permitted due to the narrow two-lane roads, which do not allow for safe pullovers. KT-NeT service is scheduled to meet the Willow Creek and Trinity Transit buses with minimal wait times for passengers.

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 when there is a minimum of three passengers.

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.

> "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*

Paratransit services in Humboldt County are operated by the HTA, BLRTS, City Ambulance of Eureka, and the City of Fortuna. Paratransit providers that were not described above 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.

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 2015 Fortuna Transit implemented a monthly service to major shopping centers in Eureka (e.g. Bayshore Mall). 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 "Report of Findings for FY 2017-18 Unmet Transit Needs" (HCAOG 2017, or most current) for brief summaries of these organizations' transportation services:*

- ☐ Adult Day Health Care of Mad River
- ☐ Area One Agency on Aging (A1AA)
- ☐ Bridgeville Community Center Van
- ☐ County of Humboldt Health and Human Services
- ☐ Ferndale Senior Resource Center "Bridging the Gap"
- ☐ Humboldt Community Access and Resource Center (HCAR)
- ☐ 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, 2016).

GOAL, OBJECTIVES, & POLICIES

The public transit objectives and policies are developed to achieve broad transit goals 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.

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: The policies listed in the Public Transportation Element will help meet the RTP's main objectives (listed in alphabetical order):

- ❖ Balanced Mode Share/Complete Streets
- ❖ Economic Vitality
- ❖ Efficient & Viable Transportation System (includes Preserving Assets)
- ❖ Environmental Stewardship
- ❖ Equitable & Sustainable Use of Resources
- ❖ Safety

OBJECTIVE: BALANCED MODE SHARE/COMPLETE STREETS

- ♦ Specific Public Transportation Objective: *Expand and improve local and interregional transit services to improve mobility for people in Humboldt County.*

Policy PT-1 To grow and meet transit demand, fund programs to increase trip frequency. Prioritize programs with the highest potential to increase ridership and reduce the number of single occupancy vehicle trips made in Humboldt County. *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

Policy PT-2 HCAOG shall support transit providers in Humboldt County in coordinating local, intercity, and interregional transportation alternatives, including with regional providers in neighboring counties. *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

Policy PT-3 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. *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

Policy PT-4 HCAOG encourages city, county, and tribal governments to pursue transit-friendly development. HCAOG encourages designs to facilitate effective transit service, such as strategically increasing densities, mix of land uses, building transit-oriented development within major transit corridors, and making it convenient to walk and bike to transit and other destinations (California Transportation Plan 2040 (Goal 5, Strategy P2-S5)). HCAOG will provide information on transit-oriented development, as requested. HCAOG encourages member and committee agencies to have transit operators actively participate in the planning and review process for new developments. *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

Policy PT-5 HCAOG supports designs and projects to enhance pedestrian access to bus stops and bicycle facilities at bus stops. *(Also supports objectives: Safety, Economic Vitality)*

Policy PT-6 HCAOG encourages transit providers to promote and accommodate bicycles on transit vehicles, and to provide secure bicycle parking facilities at transit stops and transportation centers.

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEMS

- Specific Public Transportation Objective: *Maximize operating efficiency and productivity without lowering service quality.*
- Specific Public Transportation Objective: *Ensure that transit systems meet minimum performance standards.*

Policy PT-7 Develop local funding sources to afford expanding service to meet demand. Potential sources include but are not limited to: parking fees, transportation sales tax, employer contributions, local gas sales tax, impact fees, local vehicle impact fee, and cost-sharing quotas. *(Also supports objectives Equitable & Sustainable Use of Resources)*

Policy PT-8 HCAOG shall evaluate and consider requests for extending service hours, expanding service area, and adding service frequency, based on the potential of the new service(s) to meet minimum productivity standards or better.

Policy PT-9 HCAOG shall facilitate transit service operators to use advanced technology such as vehicle location systems, dispatch and scheduling software, and safety and security systems. {"California Transportation Plan 2025" Strategy}

One person switching from driving to public transit can reduce daily carbon emissions by 20 pounds, or 4,800 less pounds in a year.

– American Public Transportation Association, 2012

Policy PT-10 HCAOG shall work to ensure ongoing service monitoring and evaluation, and short- and long-term planning. For each public transit operator and entity, HCAOG shall maintain a current transit development plan. HCAOG will follow and promote recommendations to improve system performance and sustainability whenever feasible.

Policy PT-11 HCAOG shall complete periodic performance audits of public transit services. Measure productivity based on performance measures identified in HCAOG's adopted *Regional Transportation Plan* and *Transit Development Plan*.

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

Specific Public Transportation Element objective:

- *Coordinate long-range transit planning with land use policy, environmental policy, and development projects to help achieve a balanced transportation system.*

Policy PT-12 Support transitioning transit fleets to alternative fuels that will help decarbonize California's transportation system and reduce greenhouse gas emissions.

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Specific Public Transportation Element objective:

- *HCAOG's priority is to 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 PT-13 HCAOG shall disseminate information on federal and state funding and help eligible agencies apply for funds.

Policy PT-14 HCAOG shall advocate for and support initiatives to increase federal and state transportation funds allocated for public transit services.

Policy PT-15 HCAOG shall help promote integrated social services and public transportation services, including specialized transportation programs for the county's disabled and elderly population. *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

83% of older Americans acknowledge public transit provides easy access to things they need in everyday life.

– American Public Transportation Association, 2012

NEEDS ASSESSMENT

Humboldt's public transit needs are assessed on a regular basis. HCAOG's Social Services Technical Advisory Council (SSTAC), Service Coordination Committee (SCC), 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."[1]

In 2015, the HCAOG Board made a jurisdictional finding based on the UTN process, that there were two unmet transit needs that were reasonable to meet. They made that finding for new transit service along Old Arcata Road within the unincorporated County. Since then, the County of Humboldt has been setting aside transit funding towards saving enough to initiate the service. However, it is still inconclusive whether this new service would be financially sustainable. The second finding was for bus service to Tish Non-Village in Loleta. The County of Humboldt then began allocating funds to add Tish Non-Village service stops to the Redwood Transit Service route; the service began in July, 2015. In 2016, the HCAOG Board's UTN finding was that for the FY 2016-17 there were no unmet transit needs that were reasonable to meet.

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

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, 2016). 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.

TRANSIT SURVEYS & INTERVIEWS

Transit surveys were done in 2017 (March/April) as part of the update to HCAOG's five-year *Transportation Development Plan*. Ridership information was collected in surveys on-board the transit buses as well as from an on-line community survey. The onboard passenger surveys were conducted over two weeks on all local transit systems. Trained surveyors conducted on-board surveys on HTA's and A&MRTS's busier routes, while self-help survey supplies were provided to passengers on less busy routes.

The online community survey garnered 242 valid responses online, plus 37 additional responses from printed versions that passengers filled out on the BLRTS buses. The majority of the respondents had used RTS (73%), and over half had used ETS (53 percent), and/or A&MRTS (50%). Most of the online survey respondents were 23-45 years old (43%) or 46-61 (30%), 29 answered that they were CR students and 35 said they were HSU students. The majority (66%) had one to two available vehicles in their household; 17 percent had no vehicle available. When asked about limiting disabilities, 24 answered that they have a disability that limits their use of fixed route buses.

A $1 investment in rural transit returns $1.20 in transportation cost savings and mobility benefits. This estimate, however, did not include the local economic activity and therefore may be conservative.

– National Center for Transit Research, 2014

There were 954 passengers who took the on-board survey. College and high school students constitute the bulk of riders much of the local transit systems. Surveys indicated the same, with 62% of the respondents using HSU's Jack Pass on A&MRTS, 33% on RTS, and 34% on the county-wide system. The table below shows how the on-board respondents answered the car and driver's license questions. The US Census data shows that 3.2% of Humboldt County's overall population (135,064) does not have an automobile (see Table *Intro-4,* Chapter 1-Introduction).

Table *Transit-3*, below, shows how the transit riders traveled to and from the bus on which they took the survey. The majority walked (86%). ETS had the highest number of riders (65 out of 402) who transferred to or from another bus. The ETS surveys also had the only responses that a rider took a taxi to the bus (one response), and that a rider used a wheelchair to travel to and from the bus (one response each).

COORDINATED PUBLIC TRANSIT–HUMAN SERVICES TRANSPORTATION PLAN

The *Humboldt County Coordinated Public Transit–Human Services Transportation Plan*, or Coordinated Plan (HCAOG 2016), also assesses service needs of the regional public transit/paratransit system.

Table *Transit-2*. Onboard Transit Surveys – Transit Dependency

	Car Available?				Driver's License?			
	Yes		No		Yes		No	
Service	#	%	#	%	#	%	#	%
A&MRTS	69	33%	143	67%	166	73%	60	27%
ETS	7	4%	177	96%	77	40%	115	60%
Fortuna Transit	3	11%	24	89%	6	22%	21	78%
RTS Mainline	64	18%	292	82%	198	50%	196	50%
So. Humboldt	3	11%	24	89%	14	50%	14	50%
Tish Non-Village	2	50%	2	50%	3	75%	1	25%
Willow Creek	0		2	100%	2	67%	1	33%
K-T NeT	2	14%	12	86%	8	53%	7	47%
County-wide	150	18%	676	82%	474	53%	415	47%

Source: LSC 2017

Table *Transit-3*. Onboard Transit Surveys – Travel Mode To and From Buses

Service		Travel Mode						
		Walk	*Drive*	*Bike*	*Ride in car*	*Transfer*	*Other*	Total
A&MRTS	To bus:	227	1	0	1	4	2	235
	From bus:	212	1	0	0	2	1	216
ETS	To bus:	159	1	2	4	41	2	211
	From bus:	161	1	0	1	24	3	191
RTS	To bus:	333	11	19	27	14	4	408
	From bus:	334	5	16	10	15	4	384
Southern Humboldt	To bus:	22	2	0	4	1	2	31
	From bus:	26	1	1	2	0	0	30
Tish Non-Village	To bus:	1	0	1	2	1	0	5
	From bus:	4	0	1	0	0	0	5
Willow Crk	To bus:	1	0	0	1	1	0	3
	From bus:	2	0	0	0	0	0	2
K-T NeT	To bus:	12	1	0	3	1	0	17
	From bus:	13	0	0	0	1	0	14
County-wide	To bus:	755	16	22	42	63	10	910
	From bus:	752	8	18	13	42	8	842
Total by mode		1,507 (86%)	24 (1%)	40 (2%)	55 (3%)	105 (6%)	18 (1%)	1,752 (100)

Source: LSC 2017

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:

- Service to the Humboldt Bay area from unserved/underserved communities.
- Later evening fixed-route public transit services.
- Sunday fixed-route transit services.
- Improved bus stop amenities and access.
- Additional Dial-a-Ride/Dial-a-Lift services.
- Improved frequency on Redwood Transit System and 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.

Stakeholders who participated in the 2016 update of the Coordinated Plan determined the highest ranked strategies for Humboldt County to be:

- Provide dial-a-ride services in rural areas of the county not presently served.
- Provide specialized medical trips (e.g., chemotherapy, dialysis) into Eureka.
- Establish and staff a mobility management program to advance coordination efforts within the county.
- Provide fare subsidies to lower the cost of dial-a-ride trips.
- Support, maintain, evaluate, and strengthen transportation services.

TRANSIT DEVELOPMENT PLAN (TDP) SERVICE RECOMMENDATIONS

The Transit Development Plan (TDP) is a short-range plan and is updated every five years. HCAOG adopted the current version, *Humboldt County Transit Development Plan 2017-2022,* in November 2017. The 2017 update 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."

The *Transit Development Plan 2017-2022* recommends the following alternatives, based on projected performance measures for productivity, and depending on many factors including funding availability.

For A&MRTS – "Best" alternatives would be:

- 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 a "reasonably good" option could be a the shuttle service between the downtown core and the HSU campus.

The TDP analysis indicated that, overall, the following alternatives were the better candidates to carry forward as recommendations:

For Redwood Transit Service (RTS) –

- Start a Eureka-Arcata Express service;
- Expand later Saturday RTS Mainline service; and
- Eliminate Tish Non-Village service.

For Willow Creek Transit Service – Add service to Blue Lake (on-demand stops).

For Southern Humboldt Transit – Convert service to intercity trips only.

The TDP analysis found that the following alternatives had less potential to be effective than those noted above:

- Starting service on Old Arcata Road through provision of a separate route.
- Running RTS Mainline service later hours on Sundays.
- Extending RTS Mainline to serve College of the Redwoods on Saturdays

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.

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). In addition to capital projects, the region's multi-modal balance would benefit from expanded transit and paratransit services. In 2012, the region was fortunate to get service expanded to Sundays on two bus systems, the RTS commuter line and the Willow Creek Transit System. Based on current funding forecasts, however, the region will not have funds to add any significant new services in the short-term. In the long-term, if there is sufficient funding, the region will work to implement projects, such as service expansions, that area currently unconstrained (unfunded).

Land use patterns and transit productivity are interdependent. The destinations and land uses that individuals, institutions, and municipalities choose will influence the level of transit mobility our region can achieve.

Table *Transit-4*. Regional Projects for Public Transportation

Operator / Agency	Short or Long Term[1]	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
Eureka	ST	Bus Replacement (2)	5311	2019	1,000
Eureka DAR/L	ST	Van replacement (3)	5310	2019	255
Eureka	ST	Bus Replacement (3)	5311	2021	1,500
Eureka	ST	Bus replacement (2)	5311	2026	1,000
Eureka	LT	Eureka Intermodal Transit Center	Not funded	TBD	14,000
Arcata	ST	Bus replacement (2)	5311	2017	380
Arcata	ST	Bus replacement (2)	5311	2026	380
Arcata	ST	Pursue unmet transit needs requests for service to Arcata Marsh and service on Sundays (annual cost)	Not funded	2023-33	90 annually (x10 years)
Arcata DAR	ST	Van replacement (2)	5310	2022	170
Fortuna Transit		Bus replacement	5310	2019	200
HTA	ST	RTS bus replacement (2)	5311	2024	1,000
HTA	ST	RTS bus replacement (5)	5311	2026	2,500
HTA	ST	RTS bus replacement (4)	5311	2027	2,000
HTA	ST	RTS bus replacement (1)	5311	2029	500
HTA	ST	So Hum bus replacement (5)	5311(f)	2022	950
HTA	ST	So Hum bus replacement (1)	5311(f)	2023	190
HTA	ST	Willow Creek bus replacement (1)	5311(f)	2020	190
HTA	ST	Willow Creek bus replacement (1)	5311(f)	2022	190
HTA	ST	RTS increased frequency & late night service	Not funded	2018	400 annually (x20 years)
HTA	ST	Bus parking restructuring		2018-2021	750
HTA	ST	Additional maintenance bays		2018-2021	500
HTA	ST	Solar photovoltaic system		2020-2025	1,000
HTA	ST	Feeder bus lines to McKinleyville and Fortuna to connect to RTS commuter line	Not funded	2023-33	538 annually (x10 years)

Table continues on next page.

Operator / Agency	Short or Long Term[1]	Description	Funding Source	Implementation Year(s)	Cost in Year of Expenditure[2] ($000)
HTA	ST	Park-and-Ride lots with multi-modal facilities (e.g. bike lockers, bus shelter), located near transit stops (6)	Not funded	2023-33	600
K-T NeT	ST	Intelligent Transportation System application/equipment	5311(f)	2018-2027	38
K-T NeT	ST	Relocate bus stop/bus shelter	Not funded	2014-2027	50
K-T NeT	ST	Bus replacement	5311(f)	2020-2024	90
K-T Net	ST	Bus replacement	Not funded	2027-2030	90
K-T NeT	ST	Van for existing Saturday route	Not funded	2018-2027	65
K-T Net	ST	Increased frequency	Not funded	2018-2027	32 annually (x10 years)
Blue Lake Rancheria	ST	BLRTS bus replacement	Tribal Transp'n Program Discretionary Funds (Grant)	2027	120
City Ambulance of Eureka	ST	Expand service hours and to Sundays	Not funded	2023-33	not available, TBD
				Short-Term Total	*$30,308+TBD*
				Long-Term Total	*$14,000*
				Regional Projects–Funded (Constrained) **Subtotal**	**$14,903**
				Regional Projects–Unfunded (Unconstrained) **Subtotal**	**$29,405+TBD**
				PUBLIC TRANSPORTATION PROJECTS TOTAL	**$44,308+TBD**

[1] Short-term (ST) is in the next 1 to 10 years; long-term (LT) is in the next 11 to 20 years.

[2] Assumes 2% annual inflation.

*Annual cost

PERFORMANCE MEASURES

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.

In addition to meeting reporting requirements, performance measures should be used to gauge transit goals, policies, operations, budgeting, and funding. Performance measures will help identify public transportation benefits and needs for the agency, passengers, and the community.

Table *Transit-5*. Regional Transit Service Performance Measures

Performance Goal	Performance Measure	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	
	• Percentage of on-time departures (on-time defined as within 5 minutes of scheduled time).	Goal is 100%; minimum performance level is 90% peak and 94% off-peak.
	• DAR/DAL: Maximum wait time	< 30 minutes
	• Number of service refusals on demand-response service	Goal is 0; minimum performance is < 1 per day
	• Service span	
	• Number of complaints (compliments) per 1,000 boardings	
	• 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 (KT NeT, DAR); 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 cost per service area capita	
	• Operating ratio	

(*continued on next page*)

Table *Transit-5.* Regional Transit Service Performance Measures (cont'd)

Performance Goal	Performance Measure	Standard
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 *• Passengers per vehicle service hour *• Passengers per vehicle service mile • Passengers per employee FTE *• Annual total passengers • Annual passenger miles • Average trip length • Annual passengers per service area capita • Ridership per capita (annual) • Ridership by market segment	< 50% per hour
Increase In Ridership	*• Projected versus actual ridership. • Increase in ridership correlated to new services or new areas served. • 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	

* 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 2015-16, HCAOG. (Adopted January 15, 2015)

Transportation Development Act (TDA) Unmet Transit Needs Report of Findings FY 2016-17, HCAOG. (Adopted March 2016)

Transportation Development Act (TDA) Unmet Transit Needs Report of Findings: FY 2017-18, HCAOG. (Adopted March 2017)

6. AVIATION SYSTEM ELEMENT

With the region's nine public-use airports, residents and visitors have access to faster travel which can connect them to (or from) interregional, interstate, and international destinations. The aviation system is part of a multimodal transportation system, as it connects people and packages (air passengers and air freight) to surface (highway), sea, and rail transport. Humboldt's aviation system is part of a robust California aviation system which

> improves mobility options, generates tax revenue, saves lives through emergency response, medical, and firefighting services, produces over $170 billion in air cargo revenues annually, and generates over $14 billion to the State's tourism industry (2016 RTP Guidelines).

"Aviation gives the State's multimodal transportation system access, range, and speed."

– California Aviation System Plan, 2016

AIRPORT ACCESS & MOBILITY

Airside & Landside

"Airside" and "landside" are terms that describe areas of an airport. 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 including 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.

REGIONAL AVIATION SYSTEM

Of the region's nine public-use airports, six are owned by the County of Humboldt and managed by the Aviation and Airport Division of the Humboldt County Public Works Department. The other three are owned by three different jurisdictions: the City of Eureka owns and manages Samoa Field Airport (formerly called Eureka Municipal Airport); the Hoopa Valley Tribal Council owns and manages the Hoopa Airport; and the Shelter Cove Resort Improvement District #1, owns and manages the Shelter Cove Airport, located in Shelter Cove.

The only airport with commercial passenger service is the County's California Redwood Coast–Humboldt County Airport (formerly the Arcata-Eureka Airport).[1]

AIRPORT PLANNING

> The perception that airports are just places for airplanes to take-off and land has long been dismissed by aviation system planners. Instead, airports should more accurately be viewed as economic enterprise hubs, employment centers, mixed-use commercial business centers, bulk cargo transfer centers, transit hubs, and more.
>
> – California Aviation System Plan, 2011

Airport Land Use Commission

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. The ALUC is responsible for preventing the creation of new noise and safety problems in the vicinity of public-use airports in its jurisdiction. ALUCs are an advisory body to local planning jurisdictions.

The Humboldt County Board of Supervisors is the county's designated ALUC. As the ALUC, the Board has authorized a nine-member Aviation Advisory Committee (AAC) to advise them on aviation matters within the county. The two planning bodies, the ALUC and the AAC, must evaluate potential conflicts such as noise, safety, airspace, and overflight. 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.

HCAOG consulted with the Humboldt AAC for updating the Aviation Element, Goods Movement Element, and the *Airport Ground Access Improvement Plan* (an appendix of the RTP). HCAOG attended several of the AAC's meetings during 2017, and communicated with Humboldt County staff of the Aviation Division (Public Works Department).

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

Airport Plans

Airports must be operated consistently with the policies of the region-wide Airport Land Use Compatibility Plan (ALUCP). California statute authorizes ALUCs to prepare the ALUCP, and and apply it when they review local government general plans and specific plans, including airport master plans.

Acting under its authority as the ALUC, the County Board of Supervisors adopted the *Airport Land Use Compatibility Plan: Humboldt County Airports* (last amended and adopted in 1998) (County of Humboldt, 1998). The *Airport Land Use Compatibility Plan* (ALUCP) sets policies and criteria for assessing whether land uses between Humboldt's public use airports and proposed development in surrounding areas are compatible. The compatibility criteria set standards for building heights, building construction, and restricted uses of land. The ALUCP's compatibility criteria and review policies apply broadly to all airports in the County. Additionally, the plan has specific policies, compatibility maps, and background data for the five County-operated General Aviation airports plus Shelter Cove Airport. The ALUCP does not contain specific policies or compatibility zones for the Samoa Field Airport (formerly Eureka Municipal Airport) or the Hoopa Airport or, although has policies and criteria that regulate allowed uses and residential densities around the Hoopa 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.)

> "Incompatible land uses around airports are considered the largest imminent and continuous threat to California's air transportation system of public-use airports."
>
> *– California Aviation System Plan, 2016*

AIRPORT FACILITIES

The FAA categorizes public airports as primary or nonprimary in the National Plan of Integrated Airport Systems (NPIAS). Primary airports have scheduled air carrier service for 10,000 or more enplaned passengers per year; nonprimary airports have scheduled passenger service for 2,500 to 9,999 enplaned passengers per year. The nonprimary category also includes general aviation airports and reliever airports (FAA 2016a). The California Redwood Coast Airport is the only primary airport in Humboldt. The other eight are classified as general aviation (GA) airports, which do not have scheduled passenger service, typically have at least ten based aircraft, and are 20 miles or farther away from the nearest NPIAS airport. General aviation airports serve air couriers, air ambulances, air charter, law enforcement, and private pilots.

> "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*

The Caltrans's Division of Aeronautics applies its own Airport Functional Classification system. 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.[2]

Humboldt County has nine public-use airports (Figure 7.1, see Maps Tab). As noted above, the airport owners/operators are the County of Humboldt, City of Eureka, Hoopa Tribe, and Shelter Cove Resort Improvement District #1. Below describes each airport's locale, services, and intermodal transportation links, followed with further details in Table *Avaition-1*.

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

Table *Aviation-1*. California Redwood Coast Airport Enplanements 2009-2015

Calendar year	Enplanements	Change from previous year	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%	

Source: FAA 2016b and c

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, aka Arcata Airport) lies on a 200-foot-high plateau overlooking the Pacific Ocean. It is located in McKinleyville within the unincorporated County, approximately seven miles north of Arcata and 15 miles north Eureka. The County of Humboldt owns and operates this 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 Redwood Coast Airport is a non-hub, primary commercial airport with both commercial passenger air service (the only serving the region) and freight service. As the only commercial airport in Humboldt County, it is a key transportation asset for the region's mobility, as well as its tourism and business economies. The airport building houses the U.S. Coast Guard Search and Rescue Base and offices of the Humboldt County Airports Division Offices, the Federal Aviation Administration (FAA), and the Transportation Security Administration (U.S. Department of Homeland Security).

Enplanements at Redwood Coast Airport (ACV) have dropped significantly since 2009, primarily due to the loss of service. Horizon Air, offering service through Alaska Airlines, cancelled daily flights to Seattle-Tacoma International Airport (SEA) in 2010, then pulled out altogether in April 2011, which ended direct flights from ACV to LAX. The only carrier serving ACV was then 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.

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.

Dinsmore Airport (County of Humboldt)

The Dinsmore Airport is located a quarter-mile east of Dinsmore, in an isolated area of eastern Humboldt County. The airport is in a canyon of the Van Duzen River Valley. 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. This airport operates only during daytime.

Intermodal Links

Dinsmore Airport is accessed by road from State Route 36. It is almost 42 miles along SR 36 to the interchange with U.S. 101.

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 climbs rapidly, rising up to 1,000 feet above the runway within one mile. The airport's major aviation use is for private planes.

Intermodal Links

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

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.

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 the runway; otherwise it is surrounded by mountainous open space, 2,737 feet above mean sea level. At this elevation, the airport is often 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.

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 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. 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.

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. Its runways end 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.

> "Simply stated, if airports are to be the job and economic growth centers they can be, then it is incumbent on the (Aeronautics) Division to recommend projects that would first improve airport infrastructure to safely accommodate local and regional markets."
>
> – California Aviation System Plan, 2016

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.

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. No aviation services are available, the runway is not lighted, and night operations are prohibited. The airport has 11 hangars for public use and ten runway tiedowns. 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.

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 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.

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-2*. Public-use Airports in Humboldt County

AIRPORT			LOCATION		FACILITIES							SERVICES
FAA Identifier	Name	Owner	Community	Distance[1]/ Direction	Based Aircraft[2]	Aircraft ops: Avg. for 12-mo. period ending 12/31/2017	Number of Runways	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	48/wk	2	2,700	Asphalt	No	Vis	n/a
O21	Hoopa	Hoopa Tribe	Hoopa	20 E	1	75/yr	2	2,325	Asphalt	No	Vis	n/a
0Q5	Shelter Cove	Resort Improvement District #1	Shelter Cove	56 S	0	58/wk	2	3,400	Asphalt	No	Vis	Food
ACV	Redwood Coast (formerly called Arcata-Eureka)	County	McKinleyville	–	15	115/d	2	5,998	Asphalt	Yes	Prec	Airline service[4], AvGas, jet fuel, automobile rentals, food
D63	Dinsmore	County	Dinsmore	37 SE	1	31/wk	2	2,510	Asphalt	No	Vis	n/a
O16	Garberville	County	Garberville	55 S	18	45/d	2	3,045	Asphalt	No	Vis	AvGas
O19	Kneeland	County	Kneeland	17 SE	1	134/wk	2	2,240	Asphalt	No	Vis	n/a
EKA	Murray Field	County	Eureka	11 S	48	152/d	2	3,010	Asphalt	Yes	NP	AvGas, maintenance
FOT	Rohnerville	County	Fortuna	25 S	10	75/d	2	4,025	Asphalt	Yes	NP	AvGas, maintenance

[1] Distance (in nautical miles) and direction from Redwood Coast Airport.
[2] "FAA Information Effective 17 August 2017" (www.airnav.com/airports, accessed August 28, 2017).
[3] Statute mile. [Precision; Visual; Non-Precision].
[4] Including Air Taxi
Source: "Arcata-Eureka Airport Master Plan Report" (Caltrans 2005b)

The tables *Aviation*-3 and *Aviation*-4 below show forecasts of future demand (to the year 2025) for Humboldt County public airports. Future demand for aviation services was estimated based on existing levels of based aircraft and annual operations. These forecasts come from the airport master plans or from current airport staff.

Table *Aviation-3*. Aviation Activity Forecast for Based Aircraft

Aircraft type	Based Aircraft Forecast[1]			
	2010	2015	2020	2025
Redwood Coast Airport				
Single-Engine	6	8	11	15
Twin-Engine	2	3	4	5
Turbo-Prop	1	6	6	6
Jets	2	3	6	10
Helicopter	4	4	4	4
Total	*15*	*24*	*31*	*40*
Dinsmore Airport				
Single-Engine	2	4	6	8
Total	*2*	*4*	*6*	*8*
Garberville Airport				
Single-Engine	20	21	21	22
Twin-Engine	2	2	4	5
Helicopter	0	1	1	1
Total	*22*	*24*	*26*	*28*
Hoopa Airport				
Based Aircraft	1	1	1	1
Total	*1*	*1*	*1*	*1*
Kneeland Airport				
Based Aircraft	0	0	0	0
Total	*0*	*0*	*0*	*0*
Murray Field Airport				
Single-Engine	91	92	93	94
Twin-Engine	12	13	14	15
Jet	2	3	3	4
Helicopter	1	1	2	2
Total	*106*	*109*	*112*	*115*
Rohnerville Airport				
Single-Engine	31	32	32	33
Twin-Engine	5	5	5	5
Jet	1	1	2	2
Helicopter	1	1	1	1
Total	*38*	*39*	*40*	*41*
Samoa Field Airport				
Based Aircraft	11	23*	23	23
Total	*11*	*23*	*23*	*23*
Shelter Cove				
Based Aircraft	0	0	0	0
Total	*0*	*0*	*0*	*0*

[1]Forecasts for County airports are from their respective master plans. Hoopa, Samoa Field, and Shelter Cove Airports' forecasts are from their respective staff.
*If local demand warrants building 10 T-hangars.

Table *Aviation-4*. Aviation Activity Forecast for Annual Operations

	Operation Type[1]		Annual Operations Forecast[2] 2010	2015	2020	2025
	Redwood Coast Airport					
Itinerant	Air Carrier		11,650	11,700	11,675	11,650
	Air Taxi		4,650	5,600	6,450	7,300
	General Aviation		9,700	9,800	9,950	10,100
	Dedicated Air Cargo		1,250	1,400	1,625	1,850
		Subtotal	*27,250*	*28,500*	*29,700*	*30,900*
Local	General Aviation		7,700	7,800	7,950	81,00
	Military / Government		15,000	15,000	15,000	15,000
	Dedicated Air Cargo		550	700	800	900
		Subtotal	*23,250*	*23,500*	*23,750*	*24,000*
		Total	*50,500*	*52,000*	*53,450*	*54,900*
	Kneeland Airport					
Itinerant	Single-Engine Fixed		3,000	3,000	3,300	3,300
	Single-Engine Variable		2,000	2,000	2,000	2,000
		Subtotal	*5,000*	*5,000*	*5,300*	*5,300*
Local	Single-Engine Turboprop		50	50	100	100
	Helicopters		500	500	500	500
	Light Twin-Engine		50	50	100	100
	Single-Engine Fixed		500	500	800	800
	Single-Engine Variable		400	400	700	700
		Subtotal	*1,500*	*1,500*	*2,200*	*2,200*
		Total	*6,500*	*6,500*	*7,500*	*7,500*
	Dinsmore Airport					
	Itinerant General Aviation		1,045	1,105	1,170	1,236
	Local General Aviation		630	665	700	740
		Total	*1,670*	*1,770*	*1,870*	*1,975*
	Garberville Airport					
	Itinerant General Aviation		7,475	7,896	8,340	8,809
	Local General Aviation		8,542	9,022	9,530	10,066
		Total	*16,017*	*16,918*	*17,870*	*18,875*
	Hoopa Airport					
	Itinerant General Aviation		TBD			
	Local General Aviation		TBD			
		Total	TBD			
	Murray Field Airport					
Itinerant	Air Taxi		160	170	180	190
	General Aviation		21,360	22,560	23,830	25,170
	Military / Government		320	340	360	380
		Subtotal	*21,840*	*23,070*	*24,370*	*25,740*
	Local General Aviation		48,050	50,750	53,600	56,620
		Total	*69,890*	*73,820*	*77,970*	*82,360*

Table continues on next page.

Table *Aviation-4*. Aviation Activity Forecast for Annual Operations *continued*

	Operation Type[1]		Annual Operations Forecast[2] 2010	2015	2020	2025
	Rohnerville Airport					
Itinerant	General Aviation		11,360	12,020	12,710	13,450
	Military / Government		390	390	390	390
		Subtotal	*11,750*	*12,410*	*13,100*	*13,.840*
	Local General Aviation		17,620	18,610	19,660	20,760
		Total	*29,370*	*31,020*	*32,760*	*34,600*
	Samoa Field Airport					
	Itinerant General Aviation		100	100	100	100
	Local General Aviation		200	400*	400	400
		Total	*300*	*500*	*500*	*500*
	Shelter Cove Airport					
	Itinerant General Aviation		TBD			
	Local General Aviation		TBD			
		Total	TBD			

[1] An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations.
[2] Forecasts for County airports are from their respective master plans; Samoa Field Airport forecasts are from City of Eureka staff.
* Estimate if additional hangars are built.

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):[3]

- Balanced Mode Share/Complete Streets
- Economic Vitality
- Efficient & Viable Transportation System (includes Preserving Assets)
- Environmental Stewardship & Climate Protection
- Equitable & Sustainable Use of Resources
- Safety

OBJECTIVE: BALANCED MODE SHARE/COMPLETE STREETS

Specific Aviation Objective:

[3] The objectives are described in more detail in the RTP Introduction (Chapter 1).

- *Retain and enhance Humboldt County's access to scheduled passenger airline service so that residents 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 include feasible aviation projects in the Regional Transportation Plan, including facility improvements and efforts to maintain and expand air freight and scheduled passenger airline service for Humboldt County. *(Also supports objective: Economic Vitality)*

Policy AS-2 HCAOG shall support multimodal trips by encouraging programs and projects to integrate scheduled passenger airline service with other travel modes (e.g. transit routes/schedules, secure bicycle storage).

Policy AS-3 HCAOG shall apply Complete Streets strategies to airport access road improvements for regional projects included in the Regional Transportation Plan, as well as for local projects in jurisdictions' Capital Improvement Programs.

Policy AS-4 HCAOG shall consider feasible projects to develop or extend surface transportation or mass transit systems to improve intermodal ground access to the airport, and any other ground access improvement projects the RTPA deems appropriate to that end. Proposed projects will be 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)).

OBJECTIVE: ECONOMIC VITALITY

Specific Aviation Objective:

- *Support actions to improve the economic benefits of the regional aviation system's airfreight, commerce, and tourism capacities.*

Policy AS-5 HCAOG shall help promote full utilization of airfreight capabilities in Humboldt County, and shall support increasing regional aviation resources for intermodal goods movement.

Policy AS-6 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.)

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Specific Aviation Objectives:

- *Maximize the utility and potential of regional air freight and passenger airline services with adjacent land uses.*
- *Foster small and rural communities' access to the national air transportation system. (Consistent with California State Aviation Plan–Policy MB-1.)*

Policy AS-7 HCAOG shall support regional, long-term airport planning to maintain the utility of Humboldt County airports and maximize connections to the national aviation network. HCAOG encourages airport operators to review airport needs every five years, regularly update airports plans, and implement capital improvement programs.

Policy AS-8 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. HCAOG encourages the Humboldt County Airport Land Use Commission to update the *1993 Airport Land Use Compatibility Plan–Humboldt County Airports* and to maintain a current ALUCP.

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

Specific Aviation Objective:

- *Reduce air pollutant emissions and air quality impacts of air freight transport and air passenger travel.*

Policy AS-9 HCAOG shall promote projects and programs that increase the energy efficiency and use of "clean" energy sources in aviation transportation; HCAOG shall also promote programs to reduce aviation-related air pollution.

OBJECTIVE: 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-10 Promote compatibility planning between airports and surrounding land uses. (Consistent with California State Aviation Plan 2016– Policy PL-2)

OBJECTIVE: SAFETY

Specific Aviation Objective:

- *Provide support and coordination for the continued operation of safe and efficient aviation services and facilities in Humboldt County.*
- *Ensure the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to safety hazards within areas around public airports. (Consistent with California State Aviation Plan 2016–Objective SFo-5)*

Policy AS-11 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.

> "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

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 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.

Global Warming & Sea Level Rise

The global climate crisis from greenhouse gas emissions will impact the aviation system. 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).

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. As the State's Aeronautics Division summarizes, "Low elevation coastal airports will need to address this issue from their operational perspective" (Caltrans 2016).

General Aviation System Needs Assessment (GASNA)
Semi-annually, airports statewide turn in lists of their core project needs to Caltran's Aeronautics Division. The Division compiles the data into the General Aviation System Needs Assessment (GASNA) "to help the FAA understand the types of projects that might best serve the entire State aviation system of airports" (Caltrans 2016). The GASNA highlights what capital improvement projects (CIP) airports need to better meet safety and infrastructure needs, along with capability upgrades. Table *Aviation-5* shows what local airports need in order to meet minimum standards for their airport classification, as reported in the 2013 updates to the GASNA (Caltrans' Aeronautics Division did not update the GASNA in 2015 or 2017).

Additionally, the summaries below describe what local airports need in order to accommodate existing and forecasted demand for aviation services. There are needs for infrastructure and non-infrastructure projects, i.e., for both airport planning and upgrading or expanding facilities. Following in the next subsection, the Action Plan, Table *Aviation-5* lists each airport's proposed Capital Improvement Plan projects.

PLANNING NEEDS

Airport Land Use Commission: Update ALUCP

The County's *Airport Land Use Compatibility Plan: Humboldt County Airports (ALUCP)* was written in March 1993, and is out of date. The plan must be updated to ensure that the compatibility criteria and policies adequately reflect current public health and safety concerns and needs.

Airport Ground Access Improvement Program

The Redwood Coast Airport is a primary air carrier airport because it has annual enplanements over 10,000 (55,168 enplanements in 2015) (FAA 2016b). 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)). The HCAOG Board, with a recommendation from the Humboldt County Aviation Advisory Committee, has adopted the AGAIP in as part of the RTP, first in 2014 and again in 2017. See Appendix for full program report.

FACILITY NEEDS

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.

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 has decreased from 20 to 18 (FAA 2014). If demand increases, 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.

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 (see Table *Aviation-4* for details).

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).

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. See Table *Aviation-4* for details.

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. See Table *Aviation-5* for details.

The Caltrans Division of Aeronautics prepares, in odd years, the General Aviation System Needs Assessment (GASNA) to supplement the Capital Improvement Plan (of the CASP). With the GASNA, the Division of Aeronautics staff inform and recommend to airport operators, local governments, and the FAA those improvement projects they surmise would benefit California's overall aviation system. The GASNA recommends priorities of unfunded safety, capacity, and capability projects at primarily GA airports. The table below reproduces the 2013 GASNA table by Caltrans (the most recent available at time of printing).

Table *Aviation-5*. Airport Enhancement Needs to Upgrade to Minimum Standards (Airports in Caltrans District 1)

District 1 All Projects Attribute Details									**Longest Runway Attributes**			
Airport by Caltrans Airport Functional Classification[1]	Min. stdd length[2] (Feet)	Length (Feet)	Extension cost estimate	Width (feet)	Widening cost estimate	Asphalt runway pavement condition (G-good, F-fair, P-poor)	PCI[3]	PCI or visual inspec-tion year	New pavement overlay cost for existing runway length	Usable runway rehabili-tation cost estimate	Weight bearing capacity[4] (single wheel/000 lbs)	Run-way safety area[5]
Primary Commercial Service Non-Hub				**150**		**Good**	**Very Good**				**50**	
REDWOOD COAST (formerly Arcata)	7,000	5,998	$1,107,711	150		ASPH-G	79	2006	$408,865	$408,105	60	S
Regional General Aviation				**75**		**Good**	**Very Good**				**12.5**	
MURRAY FIELD*	5,500	3,000	$1,381,875	75		ASPH-G	99	2006			19	
ROHNERVILLE*	5,600	4,005	$1,175,515	100		ASPH-G	76	2006	$180,225	$180,225	30	
Community General Aviation				**75**		**Fair**	**Very Good**				**12.5**	
SAMOA FIELD (formerly Eureka Muni)	3,500	2,700	$353,760	60	$386,925	ASPH-G	91	2002			10	
GARBERVILLE	3,700	3,050	$359,288	75		ASPH-F	53	2011	$528,413	$93,893	30	
KNEELAND*	4,500	2,252	Infeasible-terrain	50	$829,125	ASPH-G	95	2006			13	U
SHELTER COVE	3,500	3,400	$44,220	60	386,925	ASPH-G	100	2011			20	
Limited Use				**60**		**Fair**	**Very Good**				**12.5**	
DINSMORE	3,800	2,510	$456,350	48	$336,072	ASPH-P	32	2006	$278,309	$835,581	unknown	
HOOPA	3,100	2,325	$285,588	50	$228,470	ASPH-F	N/A	N/A			10	
Cost Totals			**$5,164,307**		**$2,167,517**					**$1,596,260**		

Table continues on next page.

Table *Aviation-5.* (continued)

District 1 All Projects Attribute Details	**Other Desirable Airport Safety Attributes**							
Airport by Caltrans Airport Functional Classification[1]	Visual aid	Visual aid equip. and install. cost estimate	Instrument approach procedure	24-hour on-field automated weather services	24-hour on-field automated weather services equip. & install. cost estimate	Available fuel & grade	Fuel equip. & install. cost estimate	Airport layout plan[2] (date)
Primary Commercial Service Non-Hub	**VASI/PAPI[3]**		**ILS**	**Yes**		**100LL & Jet A**		
REDWOOD COAST (formerly Arcata)	PAPI		ILS	Yes		100LL & Jet A		1/1/2002
Regional General Aviation	**VASI/PAPI**		**GPS/VOR**	**Yes**		**100LL & Jet A**		
MURRAY FIELD*	VASI		GPS	None	$130,000	100LL	$50,000	7/16/2010
ROHNERVILLE *	VASI		GPS	Yes		100LL	$50,000	7/16/2010
Community General Aviation	**VASI/PAPI**		**GPS/VOR**	**Yes**		**100LL**		
SAMOA FIELD (formerly Eureka Munic.)	None	$60,000	None	None	$130,000	None	$100,000	1/1/1984
GARBERVILLE	None	$60,000	None	Yes		100LL		7/16/2010
KNEELAND*	None	$60,000	None	None	$130,000	None	$100,000	5/1/1993
SHELTER COVE	None	$60,000	None	None	$130,000	None	$100,000	8/1/1997
Limited Use	**None**		**None**	**None**		**100LL**		
DINSMORE	None		None	None		None	$100,000	11/3/2010
HOOPA	None		None	None		None	$100,000	12/1/1992
Cost Totals		**$240,000**			**$520,000**		**$600,000**	

Note: Airport enhancement needs and estimated costs to upgrade to minimum standards as defined in the System Needs Assessment are listed in priority order from left to right.

[1] Priority 1 Airport (grey highlight); Priority 2 Airport (*); Non-NPIAS Facility (bold italic text); All runway dimensions (in feet); Minimum standard deficient (red text);

[2] Airport layout Plan minimum standard (> 5-years in red text).

[3] VASI=Visual approach slope indicator. PAPI= Precision approach path indicator.

Source: Caltrans 2013 (most current GASNA available as of August 2017).

ACTION PLAN: PROPOSED PROJECTS

The proposed projects in Table *Aviation-6* address airports' current or anticipated needs for projected future demand. Funds may or may not be available to implement these projects within the RTP's short-term or long-term planning horizon. Project priorities may change based on funding, FAA priorities, or national emergencies. Projects were identified based on Airport Master Plans, *Humboldt County Aviation Division of Public Works–Airport Capital Improvement Plan* (ACIP), *California Aviation System Plan: Capital Improvement Plan 2017-2026 (Caltrans 2017),* and communications with local agency staff and committee members.

Table *Aviation*-6. Regional Airport Capital Improvement Plan (CIP) and Planning Projects

Project Name/Description	Short or Long Term[1]	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Redwood Coast Airport (Arcata Airport) – County of Humboldt						
Obstruction Mitigation Plan	ST	tbd		tbd	2016	$75
Pavement Maintenance Management Plan	ST	tbd		tbd	2016	$85
Taxiways B&G Drainage Improvements	ST	tbd		tbd		
Air Freight Needs Assessment (to study Redwood Coast, Murray Field, and Rohnerville Airports)	ST		tbd	tbd	TBD	$38
Phase 4 ARFF – Construct ARFF Building*	ST	5,321	0.00	591	2016	$5,912
Phase 3 construct fire station	ST	tbd		tbd	2017	$3,700
Design runway lighting improvements*	ST	699,653	0.00	78	2018	$777
Obstruction Removal*	ST	180,000	0.00	20	2018	$200
Study hazard removal	ST	tbd		tbd	2018	$150
Construct runway lighting improvements*	ST	4,398	0.00	489	2019	$4,887
RNR TWY B&G/drainage (design complete 2006)	ST	tbd		tbd	2019	$509
Design roadway entrance to airport	ST	tbd		tbd	2019	$250
Construct Runway Lighting Improvements Phase 3*	ST	3,208	0.00	356	2020	$3,564
Safety Management System*	ST	45	0.00	5	2020	$50
Install sidewalk on Airport Road (see Complete Streets Element, Table *Streets*-4, for project details)						
					Subtotal	*$20,197*

Table continues on next page.

Project Name/Description	Short or Long Term[1]	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Dinsmore Airport – County of Humboldt						
Design west end storm drain improvements	ST	tbd		tbd	2016	$50
Install fence and gates	ST	tbd		tbd	2016	$40
Design windsock and segmented circle	ST	tbd		tbd	2016	$42
Obstruction Mitigation Plan & AGIS Survey*	ST	135	7	8	2017	$150
Construct windsock and segmented circle	ST	tbd		tbd	2017	$88
Construct west end storm drain improvements	ST	tbd		tbd	2018	$300
Remove/lower hazard to aircraft/ obstructions*	ST	135	7	8	2019	$150
Construct fence and gates	ST	tbd		tbd	2019	$166
Design ramp improvements	ST	tbd		tbd	2019	$50
					Subtotal	*$1,036*
Garberville Airport						
Design runway	ST	tbd		tbd	2014	$53
Construct runway RNR	ST	tbd		tbd	2015	$368
Construct ramp RNR and expansion*	ST	509	25	31	2016	$565
Obstruction removal plan & AGIS Survey*	ST	109	5	7		$121
Study removing or lowering hazards to aircraft	ST	tbd		tbd	2017	$50
Design runway safety area drainage	ST	tbd		tbd	2018	$7
Remove or lower aircraft hazards*	ST	180	9	11	2019	$200
Construct runway safety area drainage	ST	tbd		tbd	2019	$564
Ramp improvements and apron expansion	ST	509	25	31	2021	$565
					Subtotal	*$2,493*
Hoopa Airport – Hoopa Valley Tribe						
Taxiway extension to runway	ST	tbd	tbd	tbd	2016	$50
Kneeland Airport – County of Humboldt						
RSA study	ST	tbd		tbd	2015	$157
Study removing or lowering hazards to aircraft	ST	tbd		tbd	2015	$5
Design stabilization	ST	tbd		tbd	2016	$108
Construct stabilization	ST	tbd		tbd	2017	$1,078
Obstruction Mitigation Plan & AGIS Survey	ST	135	68	8	2017	150
Design fencing and gates	ST	tbd		tbd	2018	$45
Remove or lower hazards to aircrafts*	ST	135	68	8	2016	$150
Construct fencing and gates	ST	tbd		tbd	2019	$350
					Subtotal	*$2,043*

Project Name/Description	Short or Long Term[1]	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Murray Field Airport – County of Humboldt						
Construct wildlife perimeter fencing/gates	ST	tbd		tbd	2013	$609
ALP update	ST	tbd		tbd	2014	$83
Design AWOS system	ST	tbd		tbd	2015	$25
Design beacon security lighting, and emergency generator connection	ST	tbd		tbd	2015	$25
Install and implement AWOS type system	ST	tbd		tbd	2016	$270
Construct Runway 12/30 Rehabilitation (Phase 2)*	ST	810	41	50	2017	900
Beacon, security lighting, and emergency generator connection	ST	tbd		tbd	2017	$100
Design RWY/TWY RNR	ST	tbd		tbd	2017	$63
Construct RWY/TWY RNR*	ST	584	29	36	2018	$649
Design entry road rehabilitation	ST	tbd		tbd	2018	$40
Design lighting upgrade for runway and taxiway*	ST	tbd		tbd	2015	$50
Construct entry road rehabilitation	ST	tbd		tbd	2019	$480
Air Freight Needs Assessment—*see under Redwood Coast Airport*						
					Subtotal	*$3,294*
Rohnerville Airport						
Obstruction removal*	ST	135	7	8	2020	$150
Construct upgrade of RWY/TWY lighting system*	ST	1,199	60	73	2021	$1,332
Rehabilitate Runway – Design*	ST	132	7	8	2018	$147
Rehabilitate Runway – Construct Phase 2*	ST	1,112	56	68	2019	$1,234
Rehabilitate Runway – Construct Phase 3*	ST	555	28	34	2020	617
Design and construct wildlife exclusion fence/gates*	ST	536	27	33	2021	$595
Rohnerville Airport Connectivity Study (with City of Fortuna, Caltrans)	ST				2017-18	$99
					Subtotal	*$4,174*
Shelter Cove Airport – SCRID No. 1						
Slurry seal taxiway/miscellaneous pavement	ST	0.00	191	21	2017	$213
Airport Land Use Plan Update	ST	0.00	90	10	2018	$100
Improve drainage – southeast tiedown area	ST	0.00	127	14	2016	$141
Pilots' lounge	ST	0.00	54	6	2016	$60

Table continues on next page.

Project Name/Description	Short or Long Term[1]	FAA	State	Local	Implementation Year(s)	Estimated Cost[2] (000s)
Taxiway realignment planning	ST	0.00	45	5	2016	$50
Tiedown area paving, SE and NW tiedown	ST	458	23	28	2016	$509
Taxiway realignment	ST	299,295	15	18	2019	$333
10 space pilot's parking lot planning and design	ST	0.00	23	3	2025	$25
10 space pilot's parking lot	ST	0.00	63	7	2026	$70
					Subtotal	*$1,501*
Samoa Field (formerly Eureka Municipal) – City of Eureka						
Resurface runway/repaint markings*	ST	0.00	126	14	2018	$140
Remove/prune willow stand*	ST	0.00	32	4	2018	$35
Construct security fencing*	ST	0.00	113	13	2021	$125
Design T-hangars*	ST	0.00	27	3	2023	$30
Construct ten T-hangars*	ST	0.00	270	30	2024	$300
Install runway lights*	ST	0.00	450	50	2026	$500
					Subtotal	*$1,130*
Airport Land Use Commission – County of Humboldt						
County-wide update of the *Airport Land Use Compatibility Plan: Humboldt County Airports (*ALUCP)*	ST	0.00	495	55	2017-18	$550
					Subtotal	*$550*
					Short-term Subtotal	*$37,018*
					Long-term Subtotal	*$0*
					Regional Projects–Funded (constrained) **Subtotal**	TBD
					Regional Projects–Not funded (unconstrained) **Subtotal**	TBD
					REGIONAL AVIATION PROJECTS TOTAL	**$37,018**

[1] Short-term is 1-5 years; long-term is 6-10 years. [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), Aircraft Rescue and Fire Fighting Building (ARFF).

PERFORMANCE MEASURES

The table below lists performance measures 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 *Aviation-7.* Performance Measures for the Regional Aviation System

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Safety	*Collision rates* *Aviation 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).
	Airport hazards	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)	*Mobility* *Reliability*	Has travel time decreased for passengers, freight/goods trips?	• Travel mode split (shares) for freight transport.	US Census, American Community Survey, goods movement industry.
	Performance	Has the speed and/or reliability of on-time performance improved?	• Percentage of on-time deliveries/arrivals for commercial freight/passenger trips.	FAA statistics, goods movement industry studies.

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Efficient, Viable Transportation System	*System condition* *System preservation* *State of good repair*	Do aviation facilities meet standards for state of good repair? Is the road (runway) maintenance or rehabilitation backlog decreasing?	• Condition of aviation facilities. • Maintenance/rehabilitation funding shortfalls. • 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.
	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? Have system operating and maintenance costs decreased? Are truck, harbor, aviation, or rail market shares increasing for commercial passenger/freight services?	Per one thousand dollars invested: • Decreased safety violations/accidents. • Decrease in system-operating cost. • Increased frequency and reliability of aviation service. • Decrease in air pollution emissions. • Increase in commercial passenger miles carried.	Caltrans, California Air Resources Board (CARB), CHP, Public Works Departments, local and state environmental compliance reporting.
Environmental Stewardship & Climate Protection (CO_2 reduction)	*Fuel and energy use*	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.	Caltrans annual traffic counts, environmental and compliance reporting, FAA statistics.
	Air quality	Have air pollutant emissions decreased from general aviation sources?	• $PM_{2.5}$, PM_{10} emissions. • Air quality levels, including greenhouse gas emissions. • Diesel exhaust emissions.	CARB, FAA, local and state environmental and compliance reporting.
	Adaptability and resilience to climate change impacts	Have transportation CO_2 emissions decreased?	• Total transportation CO_2 per capita, countywide, and/or air-basin-wide. • Passenger transportation CO_2 per capita, countywide, and/or air-basin-wide.	CARB's EMissions FACtors model (EMFAC), environmental and compliance reporting.

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Equitable & Sustainable Use of Resources	*Equity* *Environmental justice*	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
	Transportation coordinated with land use	Has new transportation infrastructure developed agricultural or natural resource land? Are land uses and development compatible for adjacent transportation facilities?	• Acres of sensitive lands on which transportation infrastructure is built. • 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	*Economic sustainability*	Have aviation investments contributed to economic growth? Has access to jobs, markets, and/or services increased as a result of recent aviation investments?	• Direct and indirect economic benefits from increased aviation options.	

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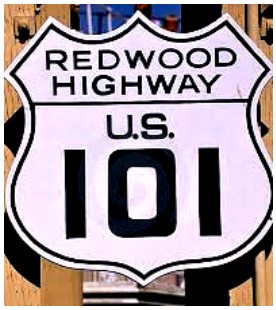
7. GOODS MOVEMENT ELEMENT

The Goods Movement element discusses what resources, needs, and opportunities the region has to transport goods and passengers via state highway/trucking, 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 7.1 (see Maps Tab) shows goods movement system facilities countywide.

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

Terminal Access Route

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) completed reconstruction on 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.

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. Caltrans has not, at the time of writing, forecasted when the project will proceed to the construction phase.

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

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. Since the railroad is not in service, commercial vessels calling on Humboldt Bay must transport their cargo loads (i.e. transload) to and from the harbor by truck. See the Maps Tab for harbor/marine facilities (Figures 7.2a and 7.2b).

The Marine Highway Program was established by Congress, pursuant to the Energy Independence and Security Act of 2007 (originally named the Clean Energy Act of 2007) and was expanded with additional 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 Humboldt Bay Harbor, Recreation and Conservation District (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.

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.

Humboldt Bay Harbor, Recreation and Conservation District

The Humboldt Bay Harbor, Recreation and Conservation District (Harbor District), a countywide public local agency, manages Humboldt Bay to promote commerce, navigation, fisheries, recreation, and to protect natural resources. HCAOG consulted with the District's Executive Director to update, review, and disseminate the Goods Movement Element, as well as other elements of the RTP update.

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:

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.

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)

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 unincorporated 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.

Port Cargo

Forest products continue to be the Port's main cargo from deepwater ships. Imports and exports are predominantly wood products (logs, wood chips); however, forest products exports have been declining for decades. The Port's other main cargo is petroleum products.

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*.

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.

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	62-acre site in Fields Landing.	Mr. Stanwood Murphy

Forest Products (Olson Dock)		
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

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.

> ...railroads carry the full burden of building and maintaining their own infrastructure, and are among the most capital intensive of all industries, with recent investment levels as a percentage of revenues devoted to capital in the range of 17 to 18 percent. By contrast, U.S. manufacturing industries spent an average of 3.5 percent, with the electric utility industry topping the group at 11.6 percent. And, with few exceptions, the rail industry must continue to make capital investments and maintain track, bridges, and locomotives across its network regardless of the business cycle. It cannot disinvest itself of mainline track or discontinue maintenance during recessions without ceasing revenue-generating service. This situation has also encouraged the railroads to be highly risk-averse.
>
> *– California State Rail Plan 2013*

RAIL TRANSPORT

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, has been out of service since 1998, and service is not expected to resume within the RTP's 20-year planning horizon.

In 1998, 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). Before operations ceased, the NWP provided freight service three days a week and occasional excursion passenger service on weekends and holidays. The service operated from Korblex south to Ignacio (Marin County) and east to Schellville (Sonoma County) and Lombard (Napa County).

To address issues related to the Emergency Order, the NCRA applied for funding from programs made available by Caltrans and the California Transportation Commission. The NCRA received $60 million of Traffic Congestion Relief Program (TCRP) funds in 2000 (of which almost $20 million was used right away for debt relief) and $7.9 million in FEMA funds in 2005. Since 2006, the NCRA has received $36.8 million to rehabilitate the Russian River Division, prepare an Environmental Impact Report for operations, and do some emergency work. In 2007-08 the NCRA applied $690,000 of the TCRP funds to the Eel River Division, repairing 300 yards of the rail levee near King Salmon. While these monies have improved the NCRA system, little of the money has been invested within HCAOG's planning area.

In May 2011, the Federal Railroad Administration ordered the partial lifting of Emergency Order No. 21. In July 2011, with the Northwestern Pacific Company (NWPCo) serving as the contract operator, the NCRA resumed freight rail operations on part of the Russian River Division, from Windsor south.

Resuming functioning freight rail service on the northern NWP line would enhance the region's intermodal goods movement, and thereby provide more economical shipping for Humboldt industries with heavy freight. Freight rail service, along with adequate transloading facilities, could potentially meet transport needs for freight such as lumber, flakeboard, municipal waste, and aggregate. However, it is uncertain whether port-rail intermodal service could generate enough freight loads to be viable long-term. For example, a study commissioned by the Harbor District (HBHRCD 2013b) shows that shipments of 10,000-30,000 carloads of aggregate every year may be necessary to sustain a profitable railroad. The study also noted problems with shipping containers or automobiles because of the Port's distance from population centers and markets, and the cost of trans-shipping goods (i.e. shipping freight to an intermediate destination, then to yet another destination [by the same mode or by a different mode])).

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

AVIATION TRANSPORT

Because of its capacity for speed and distance, air transport significantly increases mobility for moving goods and passengers. 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 a commercial passenger airline, Skywest (operating United Express flights). Skywest/United Express offers flights to San Francisco. 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 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 and cost-effectively. The region's maritime, aviation, road, and rail facilities are integrated into 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):

- Balanced Mode Share/Complete Streets
- Economic Vitality
- Efficient & Viable Transportation System (includes Preserving Assets)
- Environmental Stewardship
- Equitable & Sustainable Use of Resources
- Safety

The policies below are grouped according to the RTP's main objectives.[1] The objectives support and work in tandem with one another. Thus, a policy can help meet more than one objective.

[1] The Introduction (chapter 1) fully describes these six main planning objectives.

OBJECTIVE: BALANCED MODE SHARES/COMPLETE STREETS

Specific Goods Movement Objective:

- *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 fully consider goods movement needs and impacts in developing a multimodal transportation system, in partnership with other governmental entities, community organizations, shippers and carriers, and other interested parties. {*California Transportation Plan 2025* Strategy}

Policy GM-2 (Intermodal) HCAOG shall promote multiple uses of transportation corridors and strategic use of intermodal transfer facilities.

Policy GM-3 (Intermodal) Encourage multimodal accessibility at airports, seaports, and freight rail facilities. {*California Transportation Plan 2040* Short Range Recommendation}

Policy GM-4 (Road/Trucking) HCAOG prioritizes projects to design and maintain truck routes consistent with Complete Streets goals whenever safe and feasible.

OBJECTIVE: ECONOMIC VITALITY

Policy GM-5 (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 and goals. *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

Policy GM-6 (Aviation) HCAOG shall help promote full utilization of air freight capabilities in Humboldt County.

Policy GM-7 (Rail) HCAOG encourages the highest and best use of rail facilities and right-of-way in Humboldt County, and supports restoring freight or passenger rail service in Humboldt County if and when economically viable and environmentally compatible. *(Also supports objectives: Balanced Mode Shares/Complete Streets, Efficient & Viable Transportation System.)*

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Specific Goods Movement Objective:

- *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}

Policy GM-8 (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. *(Also supports objective: Equitable & Sustainable Use of Resources)*

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. *(Also supports objectives: Economic Vitality, Environmental Stewardship)*

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

Specific Goods Movement Objective:

- *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)

Policy GM-10 (Goods Movement) HCAOG shall support projects that improve intermodal freight access and reduce congestion, especially along freight corridors, including designated marine highways. {*California Transportation Plan 2040*}

Policy GM-11 (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*}

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

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Specific Goods Movement Objectives:

- *Preserve harbor-related land uses that serve Humboldt Bay.*

Policy GM-12 (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*} (*Also supports objective: Environmental Stewardship)*

Policy GM-13 (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.

OBJECTIVE: SAFETY

Specific Goods Movement Objective:

- *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-14 (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*} *(Also supports objectives: Efficient & Viable Transportation System, Environmental Stewardship)*

NEEDS ASSESSMENT

INTERMODAL TRANSPORT NEEDS

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.

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 and SR 299 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). The Harbor District believes that, if truck travel times on SR 299 were reduced, the Port of Humboldt Bay could export agricultural products and minerals competitively with the Port of Sacramento. Reducing truck travel times, and improving safety conditions, between Humboldt and Redding depends chiefly on improving driving conditions on the east side of Buckhorn Summit.

> The state's entire transportation system needs to strengthen its resilience and the freight system needs to be particularly adaptable so that emergency supplies can be transported and distributed when and where needed.
>
> *– California Freight Mobility Plan 2015*

Buckhorn Grade Improvement Project

Caltrans Districts 1 and 2, and the Counties of Shasta, Trinity, and Humboldt partnered to implement an inter-regional project to make the Buckhorn Grade portion of State Route 299 safer and more efficient for passenger car, recreational vehicle, and commercial truck travel. The project involved widening and/or realigning 9.6 miles of SR 299 in Trinity and Shasta Counties, including eliminating seven turns and realigning hairpin turns, and adding truck-passing lanes. Caltrans completed the project in November, 2016. The length of Buckhorn Grade now has two westbound climbing lanes, one eastbound descending lane, a four-foot-wide median and broader shoulders.

Another project objective was to remove the Advisory Route restrictions and thereby allow STAA trucks (semi-trucks longer than 48 feet) access from Interstate 5 at Redding to Highway 101 and the Port of Humboldt.

The total project cost approximately $60 million. Caltrans District 2 funded the majority of the project; HCAOG contributed $5.6 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 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 once 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. Environmental impacts both north and south disrupt intercounty transport by delaying or rerouting freight. 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. 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). In April 2017, rockslides at the junction with State Route 1 closed U.S. 101 from Leggett to fifteen miles south of Garberville, restricting travel 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.

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 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.

RAIL TRANSPORT NEEDS

Redwood Marine Terminal Business Plan

The "Redwood Marine Terminal Feasibility Study" (HBHRCD 2008) concluded that the Redwood Marine Terminal has sufficient land acreage and waterfront property to support modern cargo terminal operations if the terminal's infrastructure were modernized. The Harbor District Commissioners voted (February 2008) to proceed with the "Redwood Marine Terminal Business Plan for Development Option B," with the ultimate goal of connecting with a restored rail system.

Option B is contingent on a rail corridor connecting Humboldt Bay and the transcontinental rail system.

According to the "Redwood Marine Terminal Business Plan," to compete effectively with other secondary ports and potential new port locations for investment, the Harbor District would need to pursue the following market strategy:

- Fully evaluate the rail corridor, including cost of construction to meet standards for intermodal rail service and environmental impacts.
- Commit to a sustained multi-year effort to market the Redwood Marine Terminal given that terminal projects, including competing for investment, can take upwards of 10 years from concept to completion.
- Raise the industry profile of Humboldt Bay amongst the cargo shipping industry (terminal operators, shipping lines, shippers, etc.).

Northwestern Pacific Railroad Reopening Eel River Division

The NCRA "Strategic Plan and Progress Report" (February 2007) calls for eventually reopening the entire line from Lombard to Arcata/Samoa. The line from Willits south to Lombard reopened in July 2011. NCRA reopening the line north of Willits (Eel River Division) depends on funds being available, a number of agencies approving environmental permits, and being able to stabilize the railroad tracks through highly unstable geological materials throughout the Eel River Canyon. A considerable program of roadbed, track, bridge, tunnel and station upgrading will be necessary if operations and competitiveness are to be restarted and/or improved. To the question, "When and how will NCRA and NWP Co. resume service on the Eel River Division?" the NCRA responds:

Far Northern Portion (South Fork to Samoa)

To initiate service on a belt line from South Fork, around Humboldt Bay to Samoa:

- Funding for repairs must be secured. NWP Co. has estimated that $30 million is needed to repair the 62-67 miles from South Fork to Samoa.
- Environmental clearance to initiate repairs is obtained.
- A rail–barge transfer would be desirable to successfully implement this service.

Canyon Portion

The NCRA will consider restoring service through the Eel River Canyon when:

- A Business Plan is developed by the Operator (NWP Co.) which identifies freight volume sufficient to justify the costs of repairs and maintenance of the NWP line through the Eel River Canyon;
- An Environmental Impact Report (EIR) is prepared and certified by the NCRA Board of Directors.
- A mapping survey, geotechnical study, and EIR for the Eel River Division have determined the cost for repairs;
- The funds necessary to repair the NWP line to at least Class II level (25 mph) through the Eel River Canyon have been identified (NCRA, 2010).

In 2006 when the NCRA was preparing the Environmental Impact Report (EIR) for the Russian River Division, it stated that it would later prepare a separate EIR for the Eel River Division. However, in April, 2013, the NCRA Board rescinded provisions of its Resolution No. 2011-02 (June 2011) which certified the EIR for the Russian River Division, adopted a Statement of Overriding Considerations, and approved a project resuming freight rail service from Willits to Lombard in the Russian River Division. The NCRA rescinded parts of Resolution 2011-02 "to clarify that the NCRA did not have before it a 'project' as that term is used in the California Environmental Quality Act (CEQA) and did not approve a project when it certified the EIR that was the subject of the Resolution" (NCRA Resolution No. 2013-04, NCRA 2013). The NCRA's actions made it unclear if they would prepare an EIR for the Eel River Division project. The Friends of the Eel River subsequently filed a lawsuit against the NCRA, to which the California Supreme Court's majority opinion found that CEQA does apply to NCRA's projects to restore and resume freight service on the intrastate railroad line that the NCRA owns (*Friends of the Eel River v. North Coast Railroad Authority* (S222472), July 27, 2017).

"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

In 2012 the NCRA created the ad hoc Humboldt Bay Rail Corridor Committee (see Trails Element for more discussion) to study rail infrastructure conditions, and opportunities for developing a trail and resurrecting rail service in the corridor. From that Committee's report, the NCRA board adopted the following findings related to future rail freight or passenger service:

(Finding #1) The rail corridor infrastructure has suffered significant deterioration;

(Finding #2) Restoration of rail infrastructure to operating standards will require a significant expenditure of public funds;

(Finding #3) Interim repairs to prevent further deterioration of the NCRA rail prism in the corridor will require significant public funds;

(Finding #4) Doing nothing will result in continuing deterioration of the rail infrastructure in the corridor, further diminishing the chances that rail service will be restored in the foreseeable future;

(Finding #7) Local freight and passenger excursion service may be sufficient to cover operating and maintenance costs, but will capitalize only a relatively small portion of rail restoration costs, likewise, substantial public funding will be required for trail development. (NCRA 2012a)

The NCRA adopted the following related policies:

- NCRA will work with the Northwestern Pacific Railroad Co., the Timber Heritage Association and others to build interest in, and support for the restoration of local freight and passenger excursion service;
- NCRA will prioritize rail infrastructure restoration and trail development in the Eureka to Arcata corridor to more clearly align its timing and objectives with those of the Humboldt County Association of Governments'/Caltrans' U.S. 101 Corridor Improvement Project.

- NCRA will also prioritize rail restoration in the Arcata to Samoa corridor in order to facilitate the restoration of passenger excursion service (NCRA 2012b).

Other Rail Corridors

To explore opportunities for connecting freight from Humboldt Bay to the national rail system, some private businesses have promoted the study of conceptual east-west rail routes. Two local jurisdictions, the City of Eureka and the County of Humboldt, entered into a Memorandum of Agreement in 2012 be part of the UpState RailConnect Committee, which also includes the County of Trinity, County of Tehama, the Northern California Tribal Chairmen's Association, and the UpState California Economic Development Council. In June 2016, the Trinity County Transportation Commission (TCTC) was awarded a $276,000 Sustainable Transportation Planning Grant from Caltrans to conduct the "Upstate California RailConnect Feasibility Study." The study was to assess the feasibility of designing and building a new rail line to connect the Humboldt Bay seaport with a national rail in the Sacramento Valley. However, the TCTC decided not to accept the grant at a special meeting held on March 9, 2017.

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. Getting "more flights to more destinations" (RREDC 2013) is a need for improving mobility between our remote region and metropolitan areas. 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 draft *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 "(d)eveloping 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 final strategic plan is scheduled to be complete in the fall of 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.

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).

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	Redwood Marine Terminal	LT	Establish a multipurpose, publicly-owned marine terminal.	Not funded	Unknown	$43,000 (2014 Trans. Study)
Harbor District	Vance Avenue – Bay Street to Samoa Pulp Lane	ST	Acquire title to property; improve to Major Collector and National Highway System (NHS) standards to serve marine terminals.	Not funded	2018	$2,336
Harbor District	Vance Avenue – Samoa Pulp Lane to North Spur	ST	Acquire title to property; improve to Major Collector and NHS standards to serve marine terminals.	Not funded	2018	$1,094
Harbor District	North Spur off Vance Ave	ST	Acquire title to property; improve to Major Collector and NHS standards to serve marine terminals.	Not funded	2019	$746
Harbor District	South Spur off Vance Ave	ST	Acquire title to property; improve to Major Collector and NHS standards to serve marine terminals.	Not funded	2019	$1,033
Harbor District	Humboldt Bay Navigation Channel Shoaling Study	TBD	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)	TBD	$3,000
Harbor District	Coastal Rail Service from the Samoa Peninsula to Scotia	TBD	Project seeks to rehabilitate the coastal section for transporting freight (aggregate, dredge sediment, logs) and passengers.	Not funded	TBD	$10,000
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	2018	$978
Humboldt County	Samoa Pulp Lane – New Navy Base Road to Vance Ave	ST	Improve to Major Collector and NHS standards to serve marine terminals.	Not funded	2018	$239

Lead Agency	Project Name	Short or Long Term[1]	Description	Funding Source	Implementation Year(s)	Estimated Cost ($000)
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	ST	Road widening	2011 SHOPP	2018/19	$5,500
	The following improvements have been identified in terms of goals and objectives for freight rail; no specific projects have been proposed.					
Harbor District and NCRA	Northern Freight Corridor Restoration Project	LT	North-south rail corridor rehabilitation to reestablish service between Humboldt Bay and Willits (Mendocino County), California.	Not funded	Unknown	$600,000 (2014 Trans. Study)
NCRA (NWP Co. secondary)	Northwestern Pacific Railroad Reopening Eel River and Humboldt Bay Divisions	N/A	Repair facilities and resume service on the Eel River and Humboldt Bay Divisions of the NWP Railroad (alternately referred to as the Canyon Portion and far Northern Portion).	Not funded	Not within next 20 years per NCRA	Unknown–TBD
					Short-term Subtotal	*$10,948*
					Long-term Subtotal	*$658,907*
					Regional Projects–Funded (constrained) **Subtotal**	**$5,500**
					Regional Projects–Not funded (unconstrained) **Subtotal**	**$664,355 +TBD**
					REGIONAL GOODS MOVEMENT PROJECTS TOTAL	**$ 669,855 +TBD**

[1] Short-term is 0-10 years; long-term is 11-20 years.

PERFORMANCE MEASURES

The table below lists performance measures 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 Measures for Regional Goods Movement System

GOALS	FACTORS	INDICATORS	PERFORMANCE 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 transportation projects increased multi-modal options in the region? Has road congestion decreased?	• Travel mode split (shares) for freight transport. • Peak hour congestion	Goods movement industry.
	Performance	Has the speed and/or reliability of on-time delivery improved for goods movement?	• Percentage of on-time deliveries for commercial freight/passenger trips.	Goods movement industry studies.
Efficient, Viable Transportation System	*System condition* *System preservation* *State of good repair*	Are roads better maintained? 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).

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
	Goods movement	Are revenue yields (per shipment or per mile) sustainable for goods movement transportation (modes)?	• Shipments per cargo truck/plane or truck/plane productivity. • Out-of-route and loaded miles for freight. • Loading and unloading times for freight.	
	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? Have system operating and maintenance costs decreased? 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. • Decrease in freight travel time. • Decrease in freight/goods movement system maintenance costs. • 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.
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.
	Air quality	Have air pollutant emissions decreased from on-road mobile sources?	• $PM_{2.5}$, PM_{10} emissions. • Air quality levels. • Diesel exhaust emissions.	CARB, local and state environmental and compliance reporting.
	Adaptability and resilience to climate change impacts	Have freight-transportation-related CO_2 emissions decreased?	• Total freight-related transportation CO_2 per capita and overall (countywide).	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	Has new freight transportation infrastructure developed agricultural or natural resource land?	• Acres of sensitive lands on which freight transportation infrastructure is built. • Acres of land adjacent to airports that are	General Plan updates, Airport Land Use Compatibility Plan, Airport

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
		Are land uses and development compatible for adjacent transportation facilities?	zoned compatibly for airport noise and height restrictions. • Truck travel time to major corridors (for freight transport)	Master Plans.
Economic Vitality	*Economic sustainability*	Have freight transportation investments contributed to economic growth?	• Direct and indirect economic benefits from increased multi-modal options?	
	Goods movement	Has freight network been enhanced? Are daily destinations increasing or decreasing for commercial freight or passenger service?	• Freight capacity acreage (for port terminals, ports of entry) • Freight capacity mileage (highway connectors to port terminals, highway truck routes) • Increase in annual passengers and freight miles/tonnage per thousand dollars invested. • Annual boating activity (e.g. number of boat launchings) at harbors in coastal region. • Annual aviation ridership (boardings). • Annual departures and arrivals of commercial flights (or average daily/year).	

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8. EMERGENCY TRANSPORTATION ELEMENT

Emergency transportation, at the regional level, primarily addresses transport associated with a natural disasters, manmade incidents, or acts of terrorism, such as the need for large-scale evacuation. HCAOG's role in emergency preparedness is to help prepare the transportation system to efficiently handle great surges of travel before, during, or after a major emergency. HCAOG will support and collaborate on proactive emergency planning and projects. Projects that increase emergency readiness include upgrading and maintaining roadways, airport facilities, harbor facilities, and public transit.

> 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 to assist all the citizens of the United States 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, it 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 Californian 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)

Collaborating across jurisdictions and across agencies will strengthen the region's emergency preparedness and readiness. Entities that should be consulted 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.

In Fiscal Year 2015-16, HCAOG's Service Coordination Committee (SCC) 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, e.g., UHF, VHF, etc. 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.

Caltrans, with support by the FHWA, is developing "Update California Regional Intelligent Transportation Systems (ITS) 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 for 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.

EMERGENCY 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. Here 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. Intelligent Transportation System (ITS) technologies can help broadcast warnings and keep evacuees informed. Examples of such ITS applications are road weather and information systems (RWIS), changeable message signs (CMS), and satellite positioning technology (e.g., GPS for in-vehicle route guidance). ITS applications serve emergency personnel, such as emergency vehicle preemption (which enables first responders to preempt or extend traffic signals and navigate congested intersections).

Best practices for warning messages:

1. Develop diverse and redundant means for disseminating warning messages, including print and radio media, texting, e-mail, sirens of various kinds, pagers, highway signage, closed captioning, live sign language interpretation, and social networking sites. Ensure that audio, tactile, and written warnings are issued to maximize publicity.
2. Draft warning messages for specific, anticipated events. Include transportation information in warning messages.

ASSET INVENTORIES

For emergency planning, agencies should be aware of local and regional assets, as well as state and federal resources that can be called upon for different emergencies. Transportation assets for emergency response and evacuations potentially include the whole transportation system: 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).

The inventory of community assets will tell us what potential shelter capabilities we already have for our region. Such community assets include schools, universities, hospitals, community centers, social service agencies, independent living centers, and other congregate-type facilities, parks, and recreational venues, which can become temporary emergency shelters and staging areas for medical and food supplies.

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.

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.

Along with assessing assets, we must assess potential transportation demand in the event of a major evacuation, particularly specialized transportation needs. Demographic data about the local population can be useful, such as:

- Age
- English proficiency, literacy
- Vehicle availability/primary method of transportation
- Regular commute (e.g. routes, peak times)
- Disability status and type

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.

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.[1]

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.

[1] "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)

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.
8. Utilize paratransit drivers and dispatchers to alert regular riders of emergencies and evacuation procedures.
9. Assess the appropriateness of promoting a "buddy system," whereby people without reliable means of private transportation arrange for someone to personally warn them of an approaching disaster. A buddy may also be able to transport and evacuate those at risk, such as people with disabilities, people who do not drive or walk, and those without a car or bike. A buddy system should include contingency plans for absent buddies.

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.

Best Practices for Emergency Response Registries:

1. Test and maintain a focused registry. Registrants should be able to independently update their data. Registries should include the person's home location, work or school location, or other location he/she would likely have to vacate. Paratransit rider lists may be a good start for developing a registry.
2. Make accessible and duplicate registries, including back-ups that will be accessible during a power outage. Make back-ups accessible in multiple locations, in the event that some work sites are inaccessible or vacated (e.g. firehouses may be unstaffed if everyone is out on calls).
3. Cross-check registries with transportation asset inventories. Assess potential evacuation needs versus resources.
4. Consider alternatives to registries such as window placards, outdoor lockboxes, individual alarm systems, and other notification options.

EMERGENCY RESPONSE

TRANSPORTATION AND EVACUATION

Local paratransit and transit systems resources are some of the best assets to tap into for emergency evacuation. Transit and paratransit vehicles can serve as emergency vehicles for evacuating people. These vehicles are especially valuable for evacuating people with mobility disabilities. 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.

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.

Transportation & Evacuation Best Practices:

1. Formally agree how transit agencies will be reimbursed for excess costs related to emergency services and evacuation.
2. Stock transit/paratransit vehicles with emergency preparedness information.

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.
- 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

3. Develop and implement driver certification programs.
4. Plan for allowing quick deployment of buses, vans, and trains;
5. Develop and maintain a system to prioritize evacuations
6. Prioritize evacuating people at highest risk based on factors such as geographic proximity to the hazard, individual need and mobility.
7. Coordinate fuel, emergency repair, and other support services.

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 medical facilities. Buses and vans can also transport search and rescue teams into the affected areas. Fleet vehicles can assist in animal (pet) search and rescue as well.

DISASTER RECOVERY

Few communities develop pre-disaster recovery plans (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.

> 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

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.

During initial recovery, roads first must be cleared so emergency vehicles (fire, police, ambulance, transit) and utility crews have access with as few interruptions as possible. Secondarily, routes must be cleared to allow people to return to their neighborhoods as soon as possible. Transportation resources can aid in clean up, such as removing debris or transporting work crews to sites.

Disaster Recovery Phase Best Practices:

1. Develop debris management plans that outline how interior and exterior debris will be removed for pickup and hauled away.
2. Use neighborhood centers for charging batteries and use refrigerators to store medications.
3. Locate temporary housing at sites near public transportation.
4. Ensure transportation from congregate care facilities (shelters, temporary housing, and disaster relief centers) to essential facilities for day-to-day needs (e.g., grocery stores, pharmacies, health care centers). And/or bring mobile teams from social and health care services to temporary shelters.

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):[2]

- Balanced Mode Share/Complete Streets
- Economic Vitality
- Efficient & Viable Transportation System (includes Preserving Assets)
- Environmental Stewardship & Climate Protection
- Equitable & Sustainable Use of Resources
- Safety

OBJECTIVE: BALANCED MODE SHARES/COMPLETE STREETS

Specific Emergency Transportation objective:

- *Pursue Complete Streets objectives to give people more transportation options in emergency situations.*

OBJECTIVE: ECONOMIC VITALITY

Specific Emergency Transportation objective:

- *Increase emergency transportation preparedness to help minimize the direct costs and indirect economic losses caused by major disasters, hazards, or emergencies.*

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Specific Emergency Transportation objectives:

- *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.

[2] The objectives are described in more detail in Chapter 1, Introduction.

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

Policy Emergency-2 HCAOG will lead, facilitate, and support efforts to incorporate climate change and adaptation into emergency transportation and evacuation planning.

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Policy Emergency-3 HCAOG will facilitate and encourage involving people with disabilities and disability organizations in emergency planning, including assessments, exercises, training, debriefing, and post-action reports. *(Also supports objective: Safety)*

OBJECTIVE: SAFETY

Specific Emergency Transportation objectives:

- *Improve the emergency and security preparedness 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. 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. *(Also supports objective: Efficient & Viable Transportation System)*

Policy Emergency-5 HCAOG will help disseminate emergency preparedness information and educational materials.

ACTION PLAN: PROPOSED PROJECTS

To work towards achieving our objectives for emergency transportation, HCAOG staff and committees will begin to establish 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.

HCAOG proposes the following projects for the short-term (1-10 years) planning horizon of the RTP.

Table *Emergency-1* Regional Emergency Transportation Projects

Project 1	Interagency Emergency Transportation Planning Project
	• Foremost through the SCC, HCAOG will 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 could also address improving communications and leadership between the agencies and training within transit agencies. Transportation Guidelines for Evacuation Response (for public transit operators) - Develop guidelines for local public transit operators' participation in emergency evacuation situations at the regional level. 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. • Determine 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.

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 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. Also, the U.S. Department of Homeland Security and the California Office of Homeland Security provide several grant programs.

PERFORMANCE MEASURES

Table *Emergency-2*, below, lists performance measures for an emergency transportation system. The table groups performance measures by "goal," which correspond to the RTP's six main objectives/planning priorities.

Table *Emergency-2*. Performance Measures for Emergency Transportation

GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Balanced Mode Shares	*Access to transit, paratransit*	Has the level of transit or paratransit service increased?	• Total transit/paratransit trips. • Percentage of population within ¼ mile of a transit stop. • Major destinations not accessible by transit/paratransit.	Local transit operators' data.
Efficient & Viable Transportation System	*Coordination in emergency planning*	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	*Climate change adaption and mitigation*	Do emergency plans include or coordinate with efforts to adapt to and mitigate climate change impacts?	• Measures	Emergency plans, agreements, protocols, and asset inventories. Climate change plans.
Equitable & Sustainable Use of Resources	*Participation from most vulnerable populations*	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	*Emergency evacuation*	Are emergency evacuation resources adequate? Do emergency responders know emergency protocols for major disasters, hazards and emergencies? 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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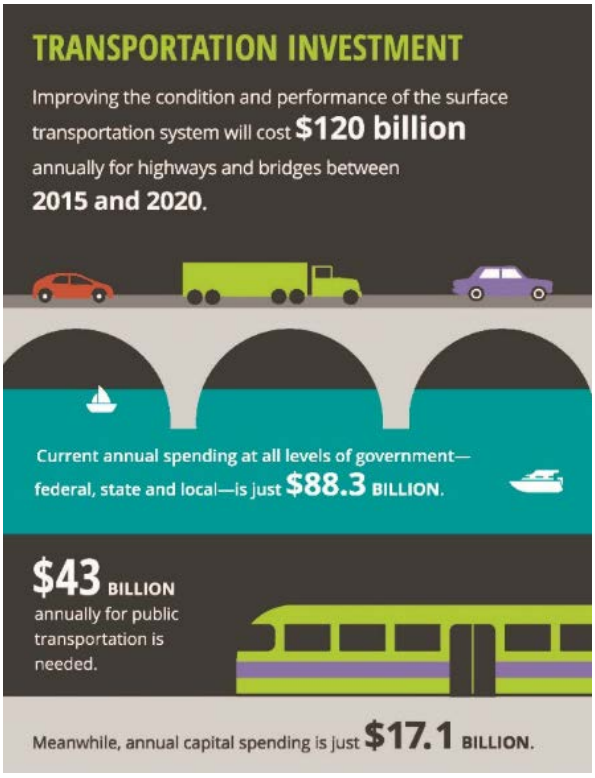
9. FINANCIAL ELEMENT

The Financial Element of an RTP is statutorily required, and it is meant to guide State and local decision-makers in determining which projects can be planned for funding within the planning period. The Financial Element is meant to define realistic financing constraints and opportunities.

Below, This Financial Element first gives an overview of current federal transportation funding, including the Fixing America's Surface Transportation Act of 2015, and the status of the Highway Trust Fund. The chapter continues to briefly describe State transportation funding—with the recent passage of the Road Repair and Accountability Act of 2017—and local funding initiatives.

Then, as required, the Financial Element describes a Finance Plan to describe how HCAOG and member entities will plan for and budget the projects proposed in the RTP's Action Elements, which list both financially constrained and unconstrained (i.e. funded and unfunded) projects. The Finance Plan identifies revenue sources, estimates projected revenues for the 20-year planning term, and compares the revenues to estimated costs. This shows, to the best of our knowledge, potential (and known) funding shortfalls.

All HCAOG projects funded in the State Transportation Improvement Program (STIP), i.e. both the Regional Transportation Improvement Program (RTIP) and the Interregional Transportation Improvement Program (ITIP), are identified in the 2017 RTP Update and included in the Federal Transportation Improvement Program (FTIP) pursuant to the STIP guidelines.



Source: Beyond Traffic 2045 (FHWA)

Under Transportation Funding Programs, below, this chapter identifies potential new funding sources that the region could pursue to obtain supplemental revenues that are needed to implement the region's transportation vision over the long term.

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 excise taxes on gasoline 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; per capita vehicle miles traveled (VMT) has 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 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. (CEAL 2012).
- 2016-2020 Fixing America's Surface Transportation Act (FAST Act), $305 billion.

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 2016b). 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.

THE FAST ACT OF 2015

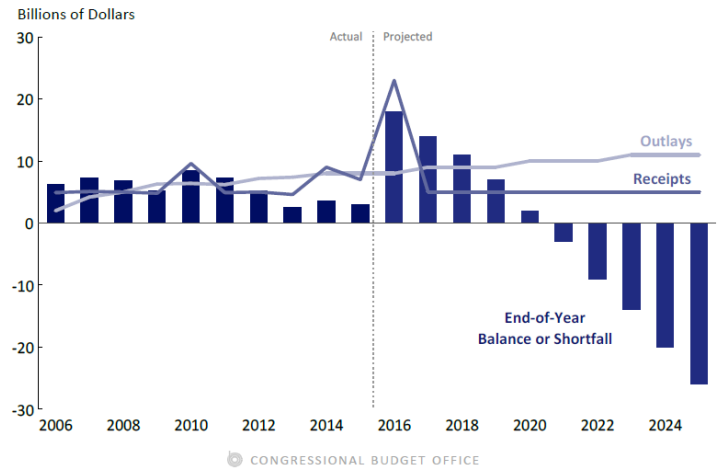
The Fixing America's Surface Transportation (FAST) Act, signed into law on December 4, 2015, transferred $71 billion, mostly from the general fund of the Treasury, to the Highway Trust Fund. Congress financed the transfer mostly by reducing both the surplus account of the Federal Reserve and the dividends paid to large member banks on their capital stock in the Federal Reserve. The FAST Act did not create any new revenue sources from transportation users (CBO 2016a).

SOLVENCY OF THE FEDERAL HIGHWAY TRUST FUND

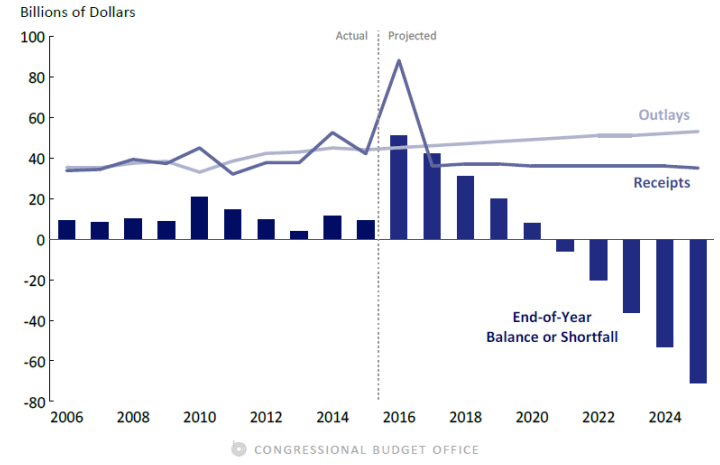
The FAST Act authorized surface transportation programs through 2020. However, by 2021, the Congressional Budget Office (CBO) projects, revenues credited to both the highway and transit accounts of the Highway Trust Fund will be insufficient to meet the fund's obligations (CBO 2016a). CBO projects the highway account will end 2017 with a balance of $42 billion. However, by 2027, the cumulative shortfall will grow to $99 billion. CBO also projects that the transit account will have a balance of $15 billion in 2017, but a cumulative shortfall totaling $39 billion by 2027 (CBO 2017). Furthermore, the CBO estimates revenues based on "the assumption that all of the expiring taxes credited to the fund will continue to be collected after fiscal year 2020," such as taxes on certain heavy vehicles and tires and all but 4.3 cents of the federal tax on motor fuels, all of which are scheduled to expire September 30, 2020 (ibid).

The graphs show the CBO's projected balances for the federal highway account and transit account.

Status of the Transit Account of the Highway Trust Fund



Status of the Highway Account of the Highway Trust Fund



Source: CBO 2016a

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 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. For example, Caltrans estimated that the cost to sufficiently fund the State Highway Operations and Protection Program (SHOPP), for FY 2014-2015 through FY 2023-24, would be $8.2 billion per year, while available funding would reach only $2 billion (Caltrans 2013a). Finally, in 2013, the State adjusted the tax rate for inflation for the first time in over 15 years. Then, 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. They also passed a constitutional amendment (ACA 12, Frazier) that protects the funds from being diverted or used for other purposes.

Road Repair and Accountability Act of 2017 (State Senate Bill 1)

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:

- Increases 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;
- Requires Caltrans to update the *Highway Design Manual* to include "complete streets" design concept, by January 1, 2018.
- 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).

Table *Finance-1* Road Repair and Accountability Act (Senate Bill 1) Revenues

Revenue Source	Date Effective	Inflation Adjustments	Annual Revenues
• 12 cents increase to the gasoline excise tax and adjustments to the current base gas tax.	Nov. 1, 2017	Annually beginning July 1, 2020	$1.8 billion
• "Reset" the price-based excise tax on gasoline to its historical average of 17.3 cents	July 1, 2019		$1.1 billion
• Transportation improvement fee collected with vehicle registration fees, based on market value of the vehicle	Spring 2018		$1.6 billion
• 20 cents-per-gallon increase to the diesel excise tax	Nov. 1, 2017		$600 million
• 4% increase to the diesel sales tax	Nov. 1, 2017	n.a.	$300 million
• $100 vehicle registration fee on zero emission vehicles sold after January 1, 2020	July 1, 2020	January 1, 2021 then annually	$20 million
• One-time funds from repayments of loans made from the Transportation Congestion Relief Program	Over 3 years	n.a.	$706 million (one-time)

Source: League of California Cities, 2017

The revenues generated by SB1 will fund existing programs and newly created programs:

- **Active Transportation Program** (ATP) is augmented by $100 million annually, beginning in 2017.
- **State-Local Partnership Program** (SLPP) will receive $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.
- **Local Transportation Planning Grants**, allocated by Caltrans, will have $25 million.
- **State Highway Operation & Protection Program** will receive approximately $1.9 billion for SHOPP and Caltrans maintaining the state highway system.
- **State Transportation Improvement Program (STIP)** funds are expected to be stabilized with $1.1 billion restored annually for capital projects and state highway system improvements.
- **(New) Local Streets & Roads** will have a continuous appropriation of $1.5 billion annually for maintenance and rehabilitation projects.
- **(New) 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.
- **(New) 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

Passage of SB1 notwithstanding, the 2018 STIP Fund Estimate indicates that there is negative program capacity for the Public Transportation Account (PTA). This means that many of the transit projects currently programmed in the STIP will have to be delivered either by using State Highway Account funds or federal funds, or projects will have to be unprogrammed (CTC 2017).

STATUS OF 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; for example, HCAOG has nominated several-million-dollars worth of STIP projects to be programmed for the region, but the California Transportation Commission has delayed disbursements for several years due to the State's funding shortfalls.

Local Sales Tax Measures

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 were recently successful in passing sales tax initiatives.

Countywide Ballot Measure U

Two relatively recent ballot measures asked for dedicated transportation funds. Both measures required a two-thirds supermajority vote to pass, and both failed. In 2012, the City of Rio Dell asked voters to authorize the City Council to issue $2 million in general obligation bonds to finance the costs of constructing street improvements (Measure J). Although a majority (55.6%) of voters voted yes, the measure failed fore lack of a two-thirds supermajority. In 2016, the County of Humboldt placed Measure U on the ballot, asking voters to approve an additional ½ percent sales tax to supplement funding for maintenance, rehabilitation, and reconstruction of existing transportation, to be in effect for 20 years countywide. If it had passed the tax would have generated an estimated $10 million annually; however, only 48.8% of voters voted yes. HCAOG provided voter education for the County Measure U.

Table *Finance*-2 Recent 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. Although a general tax , the City is committed to using the new tax revenue for improving public works (streets) and public safety services.	$1.5 million
City of Eureka	Measure O approved in November 2010.	½ percent retail transactions and use tax for five years.	$3.2 million
	Measure Q sales tax extension approved in November 2014.	Continue a ½ percent general sales tax for five years beginning on July 1, 2016.	$4.1 million based on FY 2012-13 revenues
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	$1,200,000 annually
City of Rio Dell	Measure U approved in November 2014.	1 percent general sales tax in the city for five years.	$173,000 annually
City of Trinidad	Measure G approved in November 2016.	¾ percent transaction and use tax continued for four years starting on April 1, 2017.	$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.	$12.1 million FY 2017; $11.87 million projected for FY 2018

FINANCE PLAN

In developing its RTP, an RTPA is required to make a reasonable estimate of anticipated revenues, forecasted for the next 20 years. The following funding assumptions are made for estimating the costs and revenues for the short-term and long-term planning horizons. 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:** 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).
- **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 2017). The average inflation rate in the U.S. for the last five years, 2012-2016, is 1.3 percent. The approximate average for the last 20 years (1997-2016) is 2.2%. For the updated planning period (fiscal year 2017/18-2027/2028),

we are assuming operations, maintenance, capital, and construction costs will increase, on average, two percent (2%) annually.

Complete Streets Financing (Highway, Roads, Pedestrian, Bicycle)

Assumptions:

- **HSIP:** This projection is based on the approved project list (dated November 21, 2016) for HSIP Cycle 8. Caltrans District 1 has $3,734,610 in federal funding for eight projects, six of which are in Humboldt (three for the City of Eureka, one for the City of Fortuna, two for County of Humboldt) and two in Lake County. Humboldt's six projects are funded for Humboldt for $2,441,210. As a gross estimate, HCAOG is estimating 50% of the District's Cycle 8 apportionment ($1,867,000) as an average annual amount for Humboldt's finance plan.
- **RTIP Funding Levels:** HCAOG based STIP funding forecasts on Humboldt County's share in the draft 2018 STIP Fund Estimate (Table 4, June 2017), which shows $7,983,000 for the two-year period. For consistency, we have assumed 3,992,000 annually (rounded up).
- **TAP/ATP Funding:** There is no sure way to predict how much ATP funding jurisdictions will apply for, much less how much will be awarded. HCAOG will assume that bi-annual funds will approximate the average that has been awarded countywide in the first three cycles of the ATP. Bi-annual funds are assumed to average $3.8 million.
- **ITIP Funding:** HCAOG assumes a one-time ITIP share of $15 million for the Redwood Coast Corridor Project on State Route 101. These are the only ITIP funds assumed for the 20-year finance plan.
- **SHOPP Funding Levels:** HCAOG assumes the same funding levels for the 20-year projection.
- **RSTBG Funding Levels:** For the past several years, the regional portion of STBG (formerly STP) funds was $1,147,300 annually. For the 20-year forecast, HCAOG assumes a conservative average of $1,151,000 annually, with 2% inflation.
- **LTF Non-Transit Monies:** Of HCAOG's share of the Local Transportation Fund (from TDA monies), approximately $80,000 per year is set-aside for pedestrian and bicycle projects (starting FY2013-14). After higher priority expenditures, approximately $355,000 has been available for spending on roads. HCAOG estimates the sum, $435,000, will be the average annual LTF non-transit monies. Thus, over 20 years, $10.5 million is estimated for LTF revenues reasonably available for "complete streets" projects.
- **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. These revenues are deposited 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). The CTC refers to distribution of RMRA funds to cities and counties as the Local Streets and Roads (LSR) program; fiscal year 2018-19 is the first full year of funding.

Table *Finance-3*. Financial Projections for HCAOG Regional Complete Streets Projects*

Revenue Program	Annual Projected Revenues (2017 dollars, in $000s)	20–Year Projected Revenues ($000s)	20–Year Projected Costs ($000s)	Difference in 20-year revenue to current costs
HSIP	1,867	45,400		
ITIP	750[1]	15,000[1]		
RTIP	3,992[2]	97,000		
TA/ATP	1,900[2]	38,000		
RSTBG	1,151	28,000		
LTF (for roads, ped, bike)	355	8,600		
Gas Tax Subventions: **HUTA**	6,815	165,600		
RMRA (SB1)	5,566	135,200		
Funded Projects	Local & Tribal: Caltrans District 1:		$21,657 346,930	
Unfunded Projects	Local & Tribal: Caltrans District 1:		$424,691 $0	
Maintenance Backlog			$303,000	
TOTAL:	**22,400**	**532,800**	**1,096,300**	**49%**

* Costs and revenues have been projected assuming an annual rate of inflation of 2%. Total revenues do not predict all grant funds that may be awarded in the 20-year planning period.

[1] Annual average shown for consistency; one-time share of $15 million (in FY2020) is not calculated for inflation.

[2] Annual average of bi-annual disbursement.

Sources: ITIP, RTIP: CTC 2017; Gas Tax Subventions, LSR: Coleman Advisory Services.

- **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.

Table *Finance-3* shows the summary of reasonably anticipated revenues and costs for projects identified in the "Complete Streets Element" of this RTP. The revenue estimates are simple projections of current revenues 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 49% of the funding needed to meet currently known needs.

Public Transportation Financing

Acquiring funds continues to be a significant constraint for providing more public transportation services in Humboldt County. Extended Sunday public transit services are not being planned for the ETS and A&MRTS programs because the City of Eureka and City of Arcata currently expend all

of their resources on current service levels. Expanding DAR/DAL service is not currently feasible, due to the high public subsidy costs of services and the inability of the cities to absorb the cost of increased services. The A&MRTS's limited evening service is subsidized by Humboldt State University.

Revenues from transit operations include, as applicable: fares, advertising, State Local Transportation Fund (TDA), State Transit Assistance Fund (TDA), Federal-FTA, rents/leases, interest income, carryover, City General Fund (ETS only), HSU transit user revenues, tribal contributions, 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 (BLRTS, KT-NeT).

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 (2017).
- **TDA Allocation:** TDA revenues will continue to be allocated per the current formula.
- **STA Fund (TDA funds):** In fiscal year2016-17, local transit operators received an average of approximately $596,000 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 last four years (FFY2012-2016), 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 $744,000 in 2016. HCAOG forecasts future annual revenues to be $744,000.

Public Transit Financial Projections

The *Transit Development Plan* includes a short-term financial plan for each of Humboldt County's major local transit providers (i.e., HTA, ETS, A&MRTS, FTS, BLRTS, and K-T NeT). The financial plans include five-year operating budgets and capital plans. The update being prepared in 2017 covers fiscal years 2017 to 2022 (anticipated adoption in Oct/Nov 2017). Table *Finance-4* summarizes the TDP's five-year and 20-year financial projections for public transit. Table *Finance-5* projects federal and state funding revenues.

Goods Movement Financing

The financial plans and funding sources for 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.

Table *Finance-4*. Transit System Financial Projections[1]

Transit System	Revenues FY 2015-16 ($1,000s)	Revenues, 20-Year Projection ($1,000s)	Annual Costs FY 2015-16 ($1,000s)	Costs, 20-Year Projection ($1,000s)
HTA	$5,613	$126,300	$7,017	$170,500
ETS	$1,756	$42,700	$1,743	$42,400
A&MRTS	$943	$22,900	$940	$22,800
K-T NeT	$155	$3,800	$155	$3,700
FTS	$432	$10,500	$130	$3,200
BLRTS	$77	$1,900	$14	$300
System Total (rounded)	**$8,976**	**$218,200**	**$9,999**	**$242,900**

[1] Simple 20-year projections with 2% annual inflation rate. Revenues and costs include operations and capital.
Source: "FY 2015-16 Fiscal and Compliance Reports," HCAOG 2017.

Table *Finance-5*. Projected 20-Year Transit Program Revenues

Program Source	Forecasted Annual ($1,000s)	Forecasted 20 Years* ($1,000s)
FTA 5310	$300	$7,300
FTA 5311	$744	$18,100
LTF (Transit funds)	$4,518	$109,800
STA Fund	$596	$14,500
SB1 (RRAA)	$800	$19,400
Total	**$6,958**	**$169,100**

*Assumes 2% annual inflation.

The Harbor District (HBHRCD) 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 District also utilizes grant funding from various sources.

The HBHRCD budget for FY 2013/14 includes $6.04 million in net revenue, $2.9 million in operating expenses, $3 million in non-operating expenses (capital expenses, debt payment). The year's total budget balance is $74,883.

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. For example, the Senate in March 2016 (114th Congress 2nd Session) did not reauthorize appropriations for the Federal Aviation Administration for fiscal years 2016 through 2017 (S. 2658, Thune). U.S. Senate and House committees advanced different bills in June and July

2017, for FAA reauthorization legislation. The current short-term authorization of federal aviation programs expired on September 30, 2017.

Airports not included in the 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 (GA) 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 (PFC), 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 twenty-year planning horizon.

Table *Finance*-6 summarizes total revenues and costs for projects proposed in this RTP. The amounts are copied from the project tables in the respective elements.

Table *Finance-6*. 20-Year Projected Revenues and Costs for Proposed Projects

Proposed Projects	Year 1 Projected Revenues* (000s)	20-Year Projected Revenues* (000s)	20-Year Projected Costs (000s)
Complete Streets (Table *Streets*-4)	$17,000	$532,800	$1,096,300
Public Transportation (Table *Finance*-4)	$9,000	$218,000	$243,000+tbd
Aviation (Table *Aviation*-3)	n.a.	tbd	$36,000
Goods Movement (Table *Goods*-3)	n.a.	tbd	$670,000+tbd
Emergency Transportation (Table *Emergency*-1)	n.a.	n.a.	tbd
SUMS	**$26,000**	**$613,000+tbd**	**$2,045,300+tbd**

*Does not account for individual grants. Assumes 2% annual rate of inflation.

TRANSPORTATION FUNDING PROGRAMS

The following summarizes the principal sources anticipated to be available for HCAOG's RTP projects for the 20-year planning period. (Note: 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).

One billion dollars of federal funding for highway and transit investments will support 13,000 jobs for one year.

– Council of Economic Advisors, President Obama Executive Office, 2015

FAST ACT FEDERAL TRANSPORTATION BILL

Congress and President Obama passed into law the Fixing America's Surface Transportation (FAST) Act in December 2015, enacting the first long-term transportation bill in 10 years. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020. The funds are provided for surface transportation projects, and research, technology, and statistics programs (for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, and rail). Additionally, the FAST Act authorizes the first dedicated source of federal dollars for freight projects.

FAST Act Nationwide Authorization	
FY 2016	$39.7 billion
FY 2017	$40.5 billion
FY 2018	$41.4 billion
FY 2019	$42.4 billion
FY 2020	$43.4 billion

As under previous transportation bills, the FAST Act authorizes a single amount for each year for all apportioned highway programs combined. That annual amount is apportioned among the States; each State's apportionment is then divided among six individual, federal-aid highway formula programs (including certain set-asides within the programs). The programs and nationwide funding apportionments are outlined in Table *Finance*-7, below.

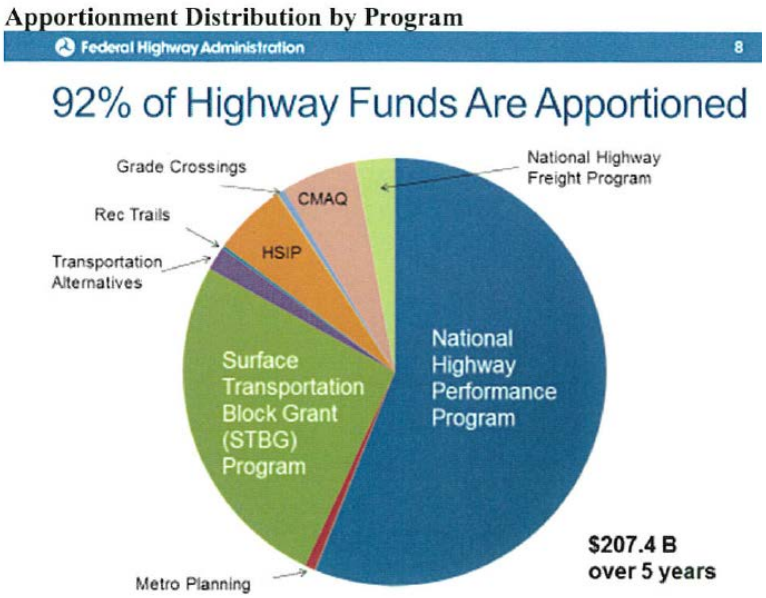


Table *Finance-7*. FAST Act's Nationwide Apportionment Totals & Percentage Increase from 2015 Levels, by Program

FAST Act Program	Avg. Annual Funding (millions)	Change from FY2015
National Highway Performance Program (NHPP)	$23,280	+6.3%
Surface Transportation Block Grant Program (STBG)	$11,654	+15.6%
• Transportation Alternatives (TA) set-aside	[$760]	+3.3%
• Recreational Trails Program set-aside	[$84]	0.0%
• Surface Transportation Block Grant Program (net of TA and Rec Trails)	[$10,809]	+7.3%
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	$2,405	+6.1%
Highway Safety Improvement Program (HSIP)	$2,317	+5.7%
Railway-Highway Crossing Program	$235	+6.8%
Metropolitan Planning	$343	+9.5%
National Highway Freight Program (NHFP) *new program*	$1,249	+100.0%

Source: U.S. DOT/FHWA 2016

The table below indexes the transportation funding programs potentially available to HCAOG and/or HCAOG member entities, transit operators, and tribes. The programs are described further following the table.

Table *Finance-8*. Transportation Funding Programs Potentially Available to HCAOG

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		
Caltrans Transportation Planning Grant Programs	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

Table continues on next page.

Program	Abbreviation	Eligible Modes/Purposes
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
Proposition 116: Clean Air & Transportation Improvement Act of 1990	Prop 116	Transit, pedestrian & bicycle
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, 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

Table continues on next page.

Program	Abbreviation	Eligible Modes/Purposes
Transportation Development Act of 1971	TDA	Highway, roads, transit, pedestrian & bicycle
Transportation Infrastructure Finance and Innovation Act	TIFIA	Surface transportation infrastructure improvements.
Transportation Investment Generating Economic Recovery	TIGER	Grants to fund planning and capital projects across surface transportation modes
Tribal Transportation Program	TTP	Road, bridge, transit, transportation planning
U.S. Forest Service	n/a	Roads

Active Transportation Program (ATP) – *State*

The California Legislature created the ATP to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates into a single program several transportation programs, including the federal Transportation Alternatives Program, state Bicycle Transportation Account, and federal and state Safe Routes to School programs.

California Office of Traffic Safety (OTS) Grants – *State*

The goal of the California Office of Traffic Safety (OTS) is to reduce deaths, injuries, and economic losses resulting from traffic related collisions. OTS funds traffic safety programs at both the statewide and community level. OTS grants fund bicycle and pedestrian safety and educational programs. Grants are not awarded for constructing bikeway facilities. Grants are based on a statewide competitive basis. (www.ots.ca.gov)

California Safe Routes To School (SR2S) – *State*

Established in 1999, the State-legislated Safe Routes to School (SR2S) program was extended indefinitely in 2007 (per AB 57). Targeted beneficiaries include children in grades K through 12. Eligible projects include infrastructure projects located in the vicinity of a school. For SRTS non-infrastructure projects, traffic education and enforcement activities must take place within approximately two miles of a primary or middle school (grades K-8). Other eligible non-infrastructure activities do not have a location restriction. SRTS infrastructure projects are eligible for TAP funds regardless of their ability to serve school populations. SRTS infrastructure projects are broadly eligible under other TAP eligibilities, which do not have any location restrictions. SRTS infrastructure projects also may be eligible in the HSIP or STP.

California Streets and Highways Code Section 887.8(b) and 888.4 – *State*

These two sections of the California Streets and Highways Code permit Caltrans to construct and maintain non-motorized facilities where such improvements will increase the capacity or safety of a State Highway. Section 888.4 requires an annual statewide budget of at least $360,000 for new non-motorized transportation facilities to be used in conjunction with the State Highway System.

California Aid to Airports Program (CAAP) and Airport Loan Program (ALP) – State

The *California Aviation System Plan* (CASP) identifies priority projects eligible for one of the Division of Aeronautics funding programs, focusing primarily on general aviation and reliever airports. (Commercial service airports seldom apply for project funding from the Division.) These funds are derived solely from General Aviation fuel excise taxes. The Division of Aeronautics, in consultation with RTPAs, prepares the CASP every five years. The current CASP Policy Element was updated in October 2016, and the CASP Capital Improvement Plan 2016-2025 was updated in August, 2015.

Caltrans' Division of Aeronautics provides aviation funding through CAAP grants and ALP loans. The CAAP has three grant programs:

- Annual Credit Grants to publicly-owned, public-use General Aviation airports. provide a $10,000 per year entitlement to reimburse eligible expenditures.
- Airport Improvement Program (AIP) to assist General Aviation (GA) and Reliever airports. The AIP Matching Grant program can fund up to 5% of the required 10% local match for a federal AIP project.
- Acquisition & Development (A&D) Grants to eligible airports for airport improvement projects or ALUCP Land Use Compatibility Plans. (A&D programmed projects constitute the Aeronautics Program.)

In addition, ALP loans are available for revenue-generating projects such as hangars and fueling facilities at eligible publicly-owned, public-use airports. Loans can also be used for airport development projects or for local matches for federal funds (Caltrans 2016).

Caltrans Transportation Planning Grant Programs – *State*

As updated by passage of Senate Bill 1 (Road Repair & Accountability Act of 2017), Caltrans envisions that these planning grants will "support regional sustainable communities strategies and ultimately achieve the State's greenhouse gas reductions targets of 40 and 80 percent below 1990 levels by 2030 and 2050, respectively" (www.dot.ca.gov/hq/tpp/grants.html). Grant programs change periodically, but the overarching objective of the transportation planning grants remains generally the same: to ensure that transportation planning statewide considers the major efforts of, among others, sustainability, preservation, mobility, safety, innovation, economy, health, and equity. The two planning grant funds are

- Transportation Planning Grants ($25 million annually). SB1 has allowed additional Sustainable Communities Grants for FY 2017-2018; and
- Climate Change Adaptation Planning Grants ($20 million over three years).

Caltrans' Division of Transportation Planning administers these grant programs through the Office of Regional Planning (ORP).

Emergency Relief Program for Federal-Aid Highways (ER) – *Federal*

The ER program provides funds for repairing federal-aid highways and roads on federal lands, which have been seriously damaged by natural disasters or catastrophic failures from an external cause. These federal funds are meant to supplement resources from States, their political subdivisions, or other Federal agencies to help pay for unusually heavy expenses resulting from

extraordinary conditions. The ER Program also funds the Emergency Relief for Federally Owned Roads (ERFO) Program, which offers 80 to 100 percent Federal share for costs to repair roads to pre-disaster conditions. A State can receive up to $100 million in ER funding for each qualifying natural disaster or catastrophic failure. The FAST ACT (effective 2016-2020) continued this program's permanent annual authorization of $100 million from the from the Highway Account of the Highway Trust Fund (HTF). Congress can appropriate additional funds on the basis of "such sums as necessary" (http://flh.fhwa.dot.gov/programs/erfo, accessed August 2017).

Federal Transit Administration (FTA) Transit Grant Programs – *Federal*

FTA Section 5304 Transit Planning Grant Program – This program is administered by Caltrans. This includes the Rural or Small Urban Transit Planning Studies Program for service areas with populations of 100,000 or less. The program offers technical planning grants to support transit and/or intermodal planning studies. In FY 2017-2018, approximately $2.8 million in FTA 5304 funding was available (in the MPO/RTPA pool) for Sustainable Communities grants of $50,000 to $500,000 ($1 million maximum for MPOs) (Caltrans 2016b)

FTA Section 5310 Elderly Individuals & Individuals with Disabilities – The Section 5310 program is a discretionary capital assistance program to serve the transportation needs of elderly persons and persons with disabilities. Section 5310 grants are awarded to public transit operators or to private non-profit organizations. Projects must be included in the RTPA's adopted "coordinated public transit–human services transportation plan" to be eligible for funds.

FTA Section 5311 Formula Grants for Rural Areas – Section 5311 targets low-density states and rural areas. Funds can cover capital and operating expenses for non-urbanized transit systems. A portion of Section 5311 funds is set aside each year for Native American tribes. Section 5311 fund revenues are shared among the Humboldt County transit operators. The operators collaborate on programming the grant fund, normally five years at a time. Typically, one vehicle per year is funded by the grant, with a matching amount from state or local sources.

FTA Section 5311(b)(2)(3) Rural Transit Assistance Program (RTAP) – The RTAP provides funds for support services for transit operators in non-urbanized areas. Support services can be for training, technical assistance, research, and related support services. Eligible recipients are States, local governments, and entities that provide rural transit services. The State RTAP is allocated to the states based on an administrative formula (www.fta.dot.gov/grants/13093_3554.html, accessed August 2017).

The RTAP is administered by California Association for Coordinated Transportation, Inc. (Cal ACT), based in Sacramento, through an agreement with Caltrans. Regional transportation planning agencies (RTPAs) assist Cal ACT in administering this program.

FTA Section 5311(f) Intercity Bus Program – 5311(f) grants provide funds for operating, capital, and/or planning intercity bus service in non-urbanized areas. The funding objectives are to connect non-urbanized intercity bus service with the larger regional or national system, and to assist with related planning, marketing, and capital facilities.

Federal Lands Access Program – *Federal*

The FAST Act continued this program (Pub. L. 114-94) established by MAP-21. The goal of the Access Program is to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands (FLATF, Federal Land Access Transportation Facility). The Access Program supplements State and local resources for transportation planning, research, engineering, preventive maintenance, rehabilitation, and construction of FLATFs, and operation and maintenance of transit facilities (https://flh.fhwa.dot.gov/programs/flap/documents/FLAP%20Implem%20Guidance.pdf accessed August 2017).

Highway Safety Improvement Program (HSIP) – *Federal*

The HSIP is a core Federal-aid program whose purpose (performance goal) is to significantly reduce fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. Eligibility of specific projects, strategies and activities generally are based on:

(i) consistency with a State's Strategic Highway Safety Plan (SHSP);
(ii) crash experience, crash potential, crash rate, or other data-supported means;
(iii) compliance with title 23 requirements; and
(iv) State's strategic or performance based safety goals to reduce fatalities and serious injuries on all public roads (www.dot.ca.gov/trafficops/hsip/, accessed August 2016).

Mello-Roos Community Facilities Act of 1982 – *State*

The act allows any county, city, special district, school district, or joint powers authority to establish a Mello-Roos Community Facilities District (CFD), which allows for financing public improvements and services when no other source of money is available. This is a flexible tool to help local governmental agencies finance needed community facilities and services by levying voter-approved special taxes.

Recreational Trails Program – *Federal*

The FAST Act reauthorized the Recreational Trails Program for Federal fiscal years 2016 through 2020 as a set-aside of funds from the Transportation Alternatives (TA) Set-Aside. . Unless the Governor opts out in advance, an amount equal to the State's FY 2009 Recreational Trails Program apportionment is to be set aside from the State's TAP funds for recreational trails projects.

Rural Planning Assistance– *State*

Rural Planning Assistance (RPA) funding is for state transportation planning activities. RPA funding is allocated to non-MPO (non-Metropolitan Planning Organization), rural RTPAs, such as HCAOG. RPA funds are allocated annually based on a population formula.

State Highway Operations & Protection Program (SHOPP) – *State*

The purpose of the SHOPP program is to maintain the integrity of the State Highway System. Projects are nominated within each Caltrans District office and are sent to Caltrans Headquarters for

programming. Final projects are determined by CTC approval. There is no formula for allocating SHOPP revenues, which presents a degree of uncertainty. Humboldt County could receive a large share of revenues in one cycle, then much less in future cycles.

State Planning and Research Funds

Caltrans uses State Planning and Research funds for planning activities mandated by federal and state law. The funds are varied and can include the FHWA Partnership Planning for Sustainable Transportation funds, the partnership planning projects that the Caltrans District works collaborates with the regional agencies on, and the SP&R that Caltran's Division of Research, Innovation and System Information handles.

State Transportation Improvement Program (STIP) – *State*

The STIP is a five-year capital improvement program to assist the state and local entities to plan and implement transportation improvements. All STIP projects must be capital projects to improve transportation, including improvements to mobility, accessibility, reliability, sustainability and safety.

The STIP is split into two programs: the Regional Transportation Improvement Program (RTIP) and the Interregional Transportation Improvement Program (ITIP). The RTIP gets 75 percent of the STIP funds, and the ITIP gets 25 percent. Regional agencies, such as HCAOG, prepare RTIPs, and Caltrans prepares the ITIP to submit to the CTC. The CTC has authority to approve RTIPs and the ITIP, which combined constitute the STIP. The CTC adopts the STIP generally every two years.

The RTIP is itself subdivided into county shares by a formula of population (25%) and road mileage (75%). HCAOG sets aside two percent of the regional STIP allocation for transit projects. These transit capital projects are programmed through HCAOG's RTIP. Local transit agencies use these funds for transit amenities such as bus shelters, rather than operations or maintenance costs, due to the tenuous nature of the STIP funding stream.

Of ITIP funds, three-fifths (3/5, i.e., 15% of STIP) are reserved, by statute, for intercity rail projects and improvements outside urbanized areas on interregional road system routes selected by Caltrans. Two-fifths (2/5) of ITIP funds (i.e., 10% of STIP) are for projects that may include State highways, intercity passenger rail, mass transit guideway, grade separation, and non-capital costs for transportation system or demand management. Caltrans nominates all projects. Regional agencies can provide input and seek co-funding on specific ITIP projects for their region.

Surface Transportation Block Grant Program (STBG) – *Federal*

The FAST Act converted the long-standing Surface Transportation Program into the Surface Transportation Block Grant Program, acknowledging that this program has the most flexible eligibilities among all Federal-aid highway programs (FAST Act § 1109; 23 U.S.C. 133). States and localities may use STP funding for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge, and tunnel projects on any public road, pedestrian and bicycle

infrastructure, transit capital projects, and public bus terminals and facilities. Eligible projects also include environmental restoration and pollution abatement

Funds are distributed among the states based on lane miles of Federal-aid highways, (including on the NHS), total vehicle-miles traveled on those Federal-aid highways, and estimated contributions to the Highway Account of the Highway Trust Fund. A portion of the STBG is set aside for TA Set-Aside and State Planning and Research. Federal STBG monies come to HCAOG as Regional STBG (RSTP) money.

Transportation Alternatives (TA) – *Federal*

The FAST Act replaced the Transportation Alternatives Program (TAP), created under MAP-21, with a set-aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA). All projects and activities that were previously eligible under TAP are eligible for TA set aside funds, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity (FAST Act §1109; 23 U.S.C. 133(h)). Transportation Alternatives projects are not required to be located along Federal-aid highways. The TAP is a competitive program and is not included in the STIP. (www.fhwa.dot.gov/fastact/factsheets/transportationalternativesfs.pdf, accessed August 2017).

Transportation Development Act (TDA) of 1971 – *State*

The Transportation Development Act (TDA) of 1971 created two funds primarily for public transportation: the State Transit Assistance (STA) account and the Local Transportation Fund (LTF). However, as the statute allows, HCAOG has adopted the policy to set aside part of the LTF allocation "for pedestrian and bicycle allocations equivalent to 2%, or the LTF increase from baseline fiscal year 2012/13, whichever is less" (HCAOG TDA Rules, adopted September 2012). Furthermore, if a jurisdiction either does not have public transportation service or is meeting all "unmet needs that are reasonable to meet" (per California PUC §99401.5), then the RTPA may approve LTF funds for streets and roads projects. TDA funds are allocated to areas of each county based on population, taxable sales, and transit performance.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

The federal TIFIA program is an "innovative finance" mechanism to leverage other credit assistance for big infrastructure projects. The federal and state government encourages public-private financing partnerships. TIFIA monies are low-interest loans, loan guarantees, or lines of credit to partially finance transportation surface transportation projects. The FAST Act authorizes $275 million to $300 million annually. Other "innovative finance" programs are the Railroad Rehabilitation and Improvement Financing Program (RRIF), and tax-exempt qualified private activity bonds (PABs). Loans are repaid by project revenues (e.g. tolls) and/or sponsor contributions (US DOT 2017).

The Transportation Investment Generating Economic Recovery (TIGER) Program – *Federal*

The TIGER Program, initiated as part of the American Recovery and Reinvestment Act of 2009 in response to the Great Recession, is a competitive grant program that funds surface transportation planning and capital projects. TIGER was originally funded for $1.5 billion, and has been renewed seven times. These federal funds leverage money from private sector partners, states, local governments, metropolitan planning organizations, and transit agencies. In total, the U.S. DOT has received more than 7,300 applications requesting more than $143 billion in TIGER grants (U.S. DOT 2017). The 2017 budget proposed by the Trump Administration proposes to cut this program.

Tribal Transportation Program (TTP) – *Federal*

The Tribal Transportation Program was established under MAP-21 and continued under the FAST Act to "provide funding to Tribes to address their transportation needs and provide access to basic community services to enhance the quality of life in Indian country" (Office of Federal Lands Highway 2017). This program generally assumes and replaces the former Indian Reservation Roads (IRR) program, adding new set-asides for tribal bridge projects (in lieu of the existing Indian Reservation Road Bridge program) and tribal safety projects. Twenty percent of the funds made available are distributed based on the tribal shares percentages of the IRR Program as calculated in FY 2011. Of the remainder of the funds, 27% is distributed based on eligible road miles; 39% is distributed based on tribal population, and 34% is divided equally among the twelve BIA regions and then distributed among Tribes in each region based on their average FY 2005-FY 2011 formula distribution.

U.S. Forest Service – *Federal*

The U.S. Forest Service places a fee on all timber receipts from national forests. By law (Title 16 U.S.C. §500), "states are entitled to 25 percent of the receipts from national forest timber sales located within their boundaries; the "State or Territorial legislature may prescribe for the benefit of the public schools and public roads of the county or counties in which such national forest is situated" (U.S. Senate 2008). Humboldt County school districts and the County of Humboldt receive half of these receipts. These monies become part of the County Road Fund, to be used for operational improvements.

POTENTIAL NEW 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 investment needs just to maintain existing facilities. The following local funding sources may potentially be considered in Humboldt County.

Local Sales Tax (Retail Transactions And 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. A similar sales tax measure in the Humboldt region is estimated to generate an additional $8.9 to $9.3 million annually for local programs.

Local sales tax initiatives are successful when they are clear about revenues and expenditures, when they include meaningful and effective accountability measures, and when these details are outlined in an Expenditure Plan that voters approve. Successful campaigns have benefitted from direct access to local decision-makers and regular public participation.

The new Local Partnership Program (created under SB1 in 2017) designates road maintenance and rehabilitation funding expressly for self-help counties.

Vehicle Registration Fee (Senate Bill No. 1183, DeSaulnier)

Senate Bill 1183 authorizes "a city, county, or regional park district to impose and collect, as a special tax, a motor vehicle registration surcharge of not more than $5 for bicycle infrastructure purposes until January 1, 2025." These revenues could pay local improvements to paved and natural surface trails and bikeways, including existing and new trails and bikeways and other bicycle facilities, and for associated maintenance purposes (SB 1183, September 2014, Chapter 516, Section 9251 of the Vehicle Code). Voters must approve this fee with a two-thirds supermajority.

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 to mitigate impacts created by the development. 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.

Benefit Assessment Act of 1982

The Benefit Assessment Act of 1982 enabled developing county-wide assessments for drainage, flood control, and street lighting. A 1989 amendment to the Act added street maintenance assessments. To date, very few cities or counties in California have instituted this assessment for street maintenance, and none in Humboldt have.

Public-Private Partnerships

A public-private partnership (PPP or P3) represent a broad category of financing mechanisms that are being used to harness public sector participation. 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.

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10. GLOBAL CLIMATE CRISIS

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."

> "While the transportation system must continue to meet demand for reliable travel, it must do so while achieving quantifiable reductions in greenhouse gas (GHG) emissions."
>
> – California Transportation Plan 2040

The following summarizes the level of uncertainty associated with potential climate changes caused by GHG emissions to the Earth's atmosphere.[1]

Temperature:	Increases in very hot days and heat waves	Very likely
Temperature:	Decreases in very cold days	Virtually certain
Temperature:	Later onset of seasonal freeze and earlier onset of seasonal thaw	Virtually certain
Sea-Level Rise:		Virtually certain
Precipitation:	Increases in intense precipitation events	Very likely
Precipitation:	Increases in drought conditions for some regions	Likely
Precipitation:	Changes in seasonal precipitation and flooding patterns	Likely

The most common human-produced GHG is carbon dioxide (CO_2). California ranks as one of the world's highest GHG emitters: among the top 50 countries of global GHG emitters, California (ranked as a country) is the eighteenth largest emitter (*Next 10* 2017). The transportation sector is the largest emitter in the state, accounting for 37 to 39 percent of statewide total. The Transportation sector's GHG emissions increased in 2015 while other sectors stayed relatively constant, except the electricity sector, which declined (CARB 2017). As reported in the 2017 California Green Innovation Index (Beacon Economics 2017),

> In 2015, total transportation-related GHG emissions rose by 2.7 percent, largely due to an increase of 3.1 percent in emissions from on-road vehicles like cars, trucks and buses. This increase seems to be a result of a strong economy and lower gas prices resulting in more vehicles on the road, combined with a housing crisis that has led to longer commutes.

The U.S. Global Change Research Program, which is implemented by a collaboration of thirteen U.S. Federal entities, periodically conducts national climate assessments. The Program assesses climate change impacts on the nation's transportation systems. Key Messages from the third assessment were as follows:

[1] In "Caltrans Climate Change Adaption" slide 17 (9/27/2011); sources cited: "Adapted from IPCC (2007) and Potential Impacts to Climate Change on U.S. Transportation, National Research Council (2008)."

1. The impacts from sea level rise and storm surge, extreme weather events, higher temperatures and heat waves, precipitation changes, Arctic warming, and other climatic conditions are affecting the reliability and capacity of the U.S. transportation system in many ways.
2. Sea level rise, coupled with storm surge, will continue to increase the risk of major coastal impacts on transportation infrastructure, including both temporary and permanent flooding of airports, ports and harbors, roads, rail lines, tunnels, and bridges.
3. Extreme weather events currently disrupt transportation networks in all areas of the country; projections indicate that such disruptions will increase.
4. Climate change impacts will increase the total costs to the nation's transportation systems and their users, but these impacts can be reduced through rerouting, mode change, and a wide range of adaptive actions. (Schwartz, Meyer, et al 2014)

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)

Climate change is also impacting California, including the Pacific Northwest region, with increased fire danger due to warmer weather and increases in drought conditions. "Fire activity is increasing on California's north coast. The good rainfall from the winter and spring has helped, but we're trending back towards drought conditions," said Hugh Scanlon, Chief for the CAL FIRE Humboldt–Del Norte Unit. In 2017, through August—although much tamer than the raging wildfire season of 2015—CAL FIRE and firefighters across the state responded to over 2,135 wildfires, 67 of which were in the Humboldt-Del Norte Unit (CAL Fire 2017). Megafires (large fires that pose great risk to human lives and resources) can prompt evacuations of rural and urban areas, directly impacting roads and highways, and other transportation corridors.

"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

LEGISLATION

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. They have ratified California's GHG emissions targets:

- By 2010, limit GHG emissions equivalent to 2000 levels, *per Governor Schwarzenegger's Executive Order S-3-05 (2005).*
- By 2020, limit GHG emissions equivalent to 1990 levels, *per Executive Order S-3-05 and California Global Warming Solutions Act of 2006 (AB 32)*;
- By 2030, limit GHG emission to 40 percent below 1990 levels, *per Governor Brown's Executive Order B-30-15 (2015) and SB 32 (Pavley 2016).*
- By 2050, limit GHG emissions to 80% below 1990 levels, *per Executive Order S-3-05 and AB 32.*

The most recent legislation, Governor Brown's interim goal (EO B-30-15), is "the most aggressive benchmark enacted by any government in North America to reduce dangerous carbon emissions over the next decade and a half" (Caltrans 2016). As one strategy to reach the target, the bill requires the State to include life-cycle accounting—including considering climate change—when prioritizing infrastructure investments. Governor Brown separately called for up to a 50 percent reduction in petroleum use by 2030 (ibid).

California Air Resources Board (ARB) released in January 2017, the second update of the statewide Scoping Plan, *2017 Climate Change Scoping Plan Update–The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target.* CARB, in July 2017, released a new analysis, "Cap-and-Trade Economic Analysis" (July 21, 2017), as part of the Proposed Scoping Plan. CARB continues its ongoing planning process to achieve the state's 2030 greenhouse gas reduction goal. *CARB Scoping Plan* Reduction Targets:

- 2006-2016 Reduce GHG emissions by 35 metric tons of carbon dioxide equivalents (MMTCO2e) to bring the State's total GHG inventory below 450 million;
- 2020 statewide limit is 431 MMTCO2e;
- 2030 statewide limit is 260 MMTCO2e;
- ARB recommends local governments, in general, aim for 6 MMTCO2e per capita by 2030 and 2 MMTCO2e per capita by 2050; and
- the "correct overall objective" is no-net increase or net zero emissions threshold.

At the national level, the Clean Air Act enables the U.S. EPA to identify GHGs as regulated air pollutants. The U.S. EPA began regulating GHGs from mobile sources and stationary sources (e.g. power plants, oil refineries) in January 2011.

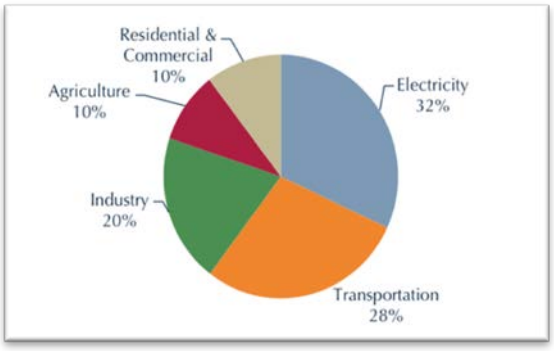


Figure *Climate-1*. U.S. Greenhouse Gas Emissions by Economic Sector (2012) Source: FAA 2015

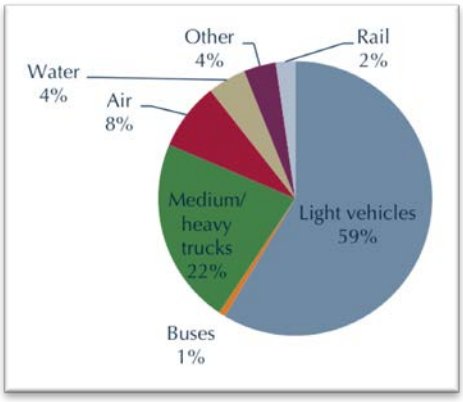


Figure *Climate-2*. Transportation Energy Use by Mode (2012) Source: FAA 2015

RTP GOALS & OBJECTIVES

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 objectives, specifically the Environmental Stewardship objective, complement AB 32 and SB 375 goals, and support the goals and objectives of the *California Transportation Plan 2040* (CTP 2040) as well.

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:

OBJECTIVE: BALANCED MODE SHARE/COMPLETE STREETS OBJECTIVE

- Promote viable, safe, affordable, and easily accessible multimodal options.
  - **POLICY CLIMATE-1**: Put forth strategies that shift travel to be more transit-focused and rideshare-oriented, to achieve more road safety benefits. *(CTP 2040 recommendation)*

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

- Reduce motor vehicle miles traveled (VMT) and lower GHG emissions.

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

- Accelerate the use of alternative fuels, new vehicle technology, pricing strategies, public transportation expansion, more bicycling and walking to contribute to GHG reduction goals. *(CTP 2040 recommendation)*
  - **POLICY C-2** Promote active transportation, ridesharing, rail, and public/mass transit promoting policies for the co-benefit of reducing air pollution when they replace motor vehicle trips. *(CTP 2040 recommendation)*

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

- Recognize the connections between transportation and land use.
  - **POLICY C-3** 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, and Local Coastal Programs. *(CTP 2040 recommendation)*

- Establish a more equitable transportation system for users of all income levels. *(CTP 2040 recommended policy)*
  - **POLICY C-4** HCAOG will support and plan transportation and projects that provide safe and convenient travel modes for people who cannot or choose not to drive.
  - **POLICY C-5** HCAOG will promote and support land use policies that accommodate or reinforce planning, designing, and building a truly multimodal transportation network.
  - **POLICY C-6** HCAOG shall encourage partnerships to develop adaptation strategies that address sea-level rise in Humboldt County.

CLIMATE CHANGE IMPACTS TO HUMBOLDT

CLIMATE CHANGE & SEA-LEVEL RISE CONDITIONS

"Coastal California is already experiencing the early impacts of a rising sea level, including more extensive coastal flooding during storms, periodic tidal flooding, and increased coastal erosion."

– California Ocean Protection Council, 2017

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 Laird 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" (Laird 2015).

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; "n 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.

HCAOG and Caltrans District 1, in 2013-2014, funded a project to assess which transportation assets in the region are likely to be most vulnerable to climate change impacts. The project assessment reported 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).

Higher precipitation will cause more extreme events, such as infrequent extreme-hazard floods, which will be temporary (but nonetheless serious). Sea-level rise will in contrast, cause tidal inundation that is a permanent condition. As Laird points out (2015), practitioners should differentiate these impacts when assessing future conditions and when planning adaptive strategies.

HUMBOLDT'S TRANSPORTATION ASSETS AT RISK

U.S. Highway 101, running north-south, is the major transportation corridor in Humboldt County. Additional critical corridors, running east-west, are State Routes 299, 255, 96, and 36. On Humboldt Bay, the U.S. 101 corridor includes the Northwest Pacific Railroad and the Humboldt Bay Trail (including the northern segment (Arcata to Bracut) and the proposed segment from Bracut to Eureka). Nearly 75% of Humboldt Bay (almost 77 miles) 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 (9.6 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 (Laird 2015).

When dikes are breached or overtopped in an extreme event, it is common for jurisdictions to refortify and rehabilitate dikes because it is one of the relatively easier "quick fixes." However, it is by no means cheap. "On Arcata Bay, for example, fortification and rehabilitation of dikes cost $900,000 to $2,000,000 per mile, without any significant increase in elevations. These fortified dikes will not be able to withstand projected sea level rise above three or six feet" (ibid).

> ""CA is the nation's largest car market, and a dozen other states, comprising more than 40 percent of the U.S. population, have adopted California's emissions standards."
>
> – S.F. Chronicle, July 2017

As part of the Humboldt Bay Sea Level Rise Adaptation Planning Project (Phase II), Aldaron Laird and other professionals assessed the vulnerability, among other "critical regional assets," the vulnerability of transportation infrastructure to tidal inundation under then-current conditions (2014). The final report identified these transportation resources (and associated water body(ies)) as the most at risk for flooding/inundation due to dikes or railroad beds (or other protective shoreline structures) being breached or overtopped:

- Jacobs Ave, Eureka urban area;
- Murray Field Airport (Eureka Slough);
- Portions of Caltrans Highway 101 (South Bay and Lower Arcata Bay);
- Portions of Caltrans Highway 255 (Arcata Bay); and
- City of Eureka, City of Arcata, and Humboldt County local streets and roads (Mad River Slough, Eureka Slough, and Elk River Slough) (Laird 2015).

The estimated vulnerabilities of the US 101 transportation corridor under future conditions are described in more detail below, under the research/planning studies:

- Humboldt Bay Sea Level Rise Adaptation Planning Project (2013-2015)
- District 1 Climate Change Vulnerability Assessment (2014)

RESEARCH AND PLANNING

CLIMATE CHANGE VERNACULAR

"Adaptation planning" is a common term used to describe strategic planning for dealing with the local, regional, or global impacts of climate change. One of the first steps of the adaptation planning process is to asses which community assets must be prioritized for planning and action. Some main concepts and processes of this assessment are described in the following.

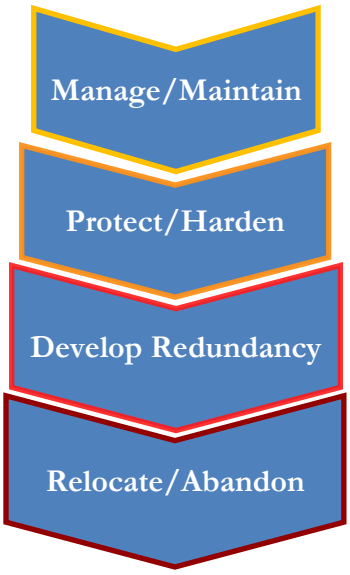
Risk — Risk is considered a function of the *likelihood* the asset will be impacted, coupled with *consequences* of the asset being impacted:

- **Likelihood —** the chance or probability of an impact occurring.
- **Consequences** — the magnitude of effects (social, economic, legal, and environmental) if an impact does occur.
- **Risk tolerance** — "The amount of risk involved in a decision depends on both the consequences and the likelihood of *realized* impacts that may result from SLR. (The realized impacts, in turn, depend on the extent to which the project design integrates an accurate projection of SLR) (CO-CAT 2013).

Vulnerability — Practitioners often assess how vulnerable an asset is by evaluating these three characteristics of an asset:

- **Exposure –** How and to what extent will the asset experience an impact?
- **Sensitivity –** How much, or to what degree, will the asset be impaired by an impact?
- **Adaptive capacity –** How well is the asset able to inherently accommodate or adjust to an impact (i.e., without or before outside intervention), thereby allowing it to maintain its primary functions? "In most situations, adaptive capacity must be front-loaded, or built into the initial project; it cannot be assumed that adaptive capacity can be developed when needed unless it has been planned for in advance" (ibid).

Continuum of Investment Choices for Adaptation



>>Prepare for escalating cost due to increasing stress or shorter service life.

>>Enhance resiliency with natural buffers and/or modified design standards.

>>Prepare alternate routes to prepare for disrupted service/intermittent loss of service.

>>Reduce exposure to risk by moving service to lower-risk areas.

For instance, if an asset has *low sensitivity* and a *high adaptive capacity*, then it can tolerate impacts relatively well. Thus, overall it has a lower vulnerability. On the other hand, if an asset is *sensitive* to an impact and cannot adjust well (or at all) to the impact (*low adaptive capacity*), then the asset is more susceptible to impacts; thus, it is more vulnerable, or has high vulnerability.

STATE-LEVEL PLANNING

The *California Transportation Plan 2040* (CTP 2040) states,

> California's goal for all sectors and economic activities is to reduce GHG emissions while we go about our daily business. For transportation, this means making significant changes in how we travel. We must provide access and mobility for people and businesses, yet reduce our single occupant miles traveled and advance cleaner vehicles and fuels. …The CTP 2040 for the first time examines various strategies to help us move towards a low-carbon transportation system (Caltrans 2016).

Caltrans also states in the CTP 2040 that "(p)reparing transportation infrastructure for climate change impacts is a new priority as future projects are designed and the current system is maintained." To this end, one of their short-range recommendations is to "Require climate change resiliency in programs and projects funded by the State Highway Operations Protection Program (SHOPP) or the State Transportation Improvement Program (STIP)" (Appendix 8, Caltrans 2016).

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**, in 2010, had the Draft Trinidad Climate Action Plan (CAP) 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.
- **Humboldt State University** (HSU) completed its Climate Action Plan in December, 2016. It aligns with the California State University Sustainability Policy, which calls for campuses to reduce their facility GHG emissions to or below 1990 levels by 2020, and to further reduce emissions to 80% or more below 1990 levels by 2040.
- The **Humboldt Bay Municipal Water District** (HBMWD) discusses climate change throughout its *Humboldt Bay Municipal Water District Urban Water Management Plan 2015* (June 2016). The Management Plan appends the "Climate Change Vulnerability Assessment" from the *North Coast Integrated Regional Water Management Plan–Phase III* (August 2014). HBMWD participated with the North Coast Resources Partnership, the governing body for the integrated regional water management plan for the North Coast region of California (Sonoma County north to the Oregon border and east to Trinity, Siskiyou and Modoc Counties).
- The **Redwood Coast Energy Authority** (RCEA, a local government joint powers authority) has expertise in preparing GHG emission inventories for local governments. RCEA 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.

District 1 Climate Change Vulnerability Assessment (2014)

The *District 1 Climate Change Vulnerability Assessment and Pilot Studies: FHWA Climate Resilience Pilot Final Report's* (Vulnerability Assessment's) final report presents the results of Caltrans District 1 Climate Change Pilot Study (D1CCPS), which was conducted to identify and classify the state-owned transportation assets found to be potentially vulnerable to climate change impacts. The Vulnerability Assessment focused on primary climate change effects (temperature and precipitation), and projected potential impacts of secondary effects such as erosion, flooding, and landslides.

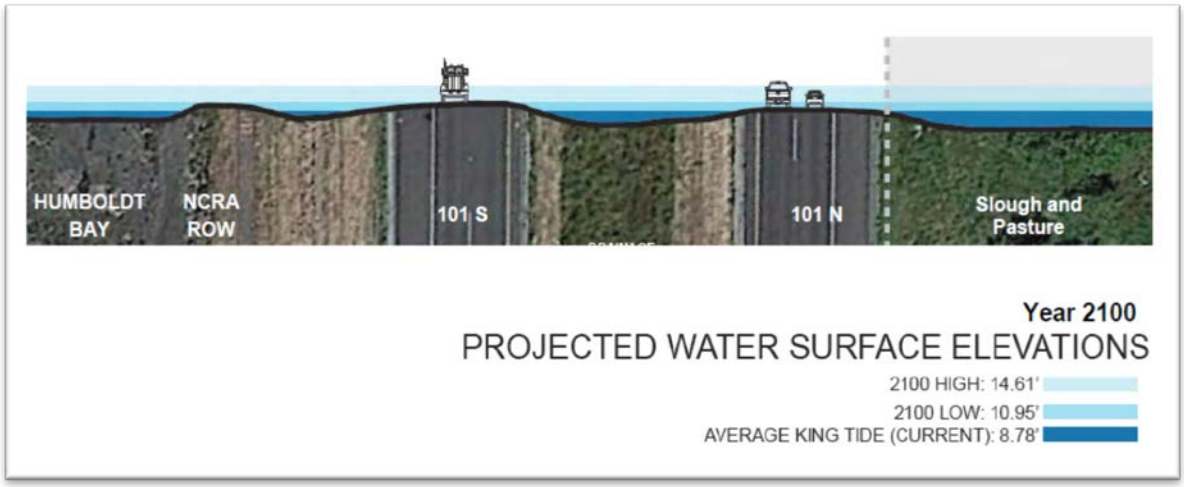


Figure *Climate-3*. Highway 101 Vulnerability to Sea-Level Rise Along Humboldt Bay
Water heights predicted for year 2100 under the high GHG emission scenario and the annual average King tide.

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:

- **Rated most vulnerable:** U.S. 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:** U.S. 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:** U.S. 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. Among the concepts were strategies such as 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 below in Table 1.

Humboldt Bay Sea Level Rise Adaptation Planning Project (2013-2015)

The Humboldt Bay Sea Level Rise Adaptation Planning Project, funded by the California Coastal Conservancy, provided

- a shoreline inventory, mapping, and vulnerability assessment (Laird, Powell, & Anderson 2013; Laird 2015); and
- inundation/flood vulnerability modeling and mapping (NHE 2015).

Table *Climate*-1. **Summary of Humboldt County-U.S. 101 Prototype Location Adaptation Options**

Rank	Adaptation Approach & Option	Project Description	2050 Cost Estimate (order of magnitude in 000s)*	2100 Cost Estimate (order of magnitude in 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	$121,310	$121,460
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	$60,570	$117,630
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	$173,680	$368,040
4	*"Retreat" approach*: Relocate infrastructure (horizontally)	Assumed 8 mile re-route to the east of the existing Hwy 101	$350,000	$350,000
5	*"Changes in policies or practices" approach*: Increase the infrastructure's maintenance & inspection interval and continue to monitor/evaluate	Equivalent to the No-Project alternative. Only temporary measures enacted and repairs made on an as-needed basis.	$950	$950
6	*"Retreat" approach*: Temporarily restrict use of infrastructure	Install ITS infrastructure to recommend use of alternate route and increase signage and warning information	$1,080	$1,080

* 2014 dollars. Source: District 1 and Caltrans 2014 *(adapted from Table 5)*

Figure *Climate-4,* below, 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 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).

Phase II of the SLR Adaption Planning Project mapped areas most at risk of water inundation/flooding if existing shoreline structures, such as dikes and railroad beds, are breached or overtopped. The transportation systems (and associated water body) thus identified are:

<u>Years 2015 to 2050, near-term conditions:</u>

- 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) (Laird 2015)

Figure *Climate-4*. 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

Figure *Climate-5*. North segment, lower Arcata Bay Reach existing conditions:
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 22)

Figure *Climate-6*. Middle segment, South of Eureka existing conditions:
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 23)

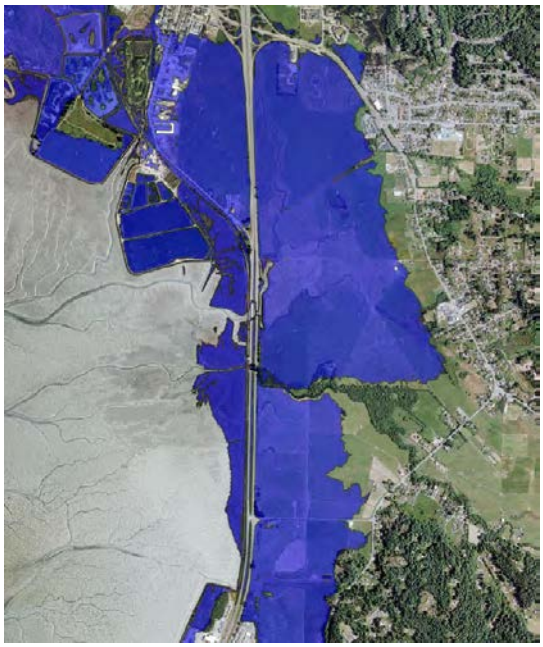


Figure *Climate-7*. North segment, upper Arcata Bay Reach 2015–2050:
Assuming tidal elevation is 9.38 feet (MMMW+0.5 meter sea level rise) and that protective shoreline structures are compromised, the land adjacent to the road prism is inundated to the west and east of Highway 101.
Source: Laird 2015 (Figure 25)

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

"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.

Three of the paper's tables are reproduced below.

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.

Table *Climate-2*. **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)

Table *Climate-3*. **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-4*. **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-m 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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APPENDIX A

Airport Ground Access Improvement Plan

for California Redwood Coast–Humboldt County Airport (ACV)

Airport Ground Access Improvement Program
for California Redwood Coast–Humboldt County Airport (ACV)

PROGRAM PURPOSE

CALIFORNIA MANDATE

HCAOG, in its duties as the Regional Transportation Planning Agency (RTPA), must adopt a long-term regional transportation plan, and update it every four years. The RTPA must include in the plan an airport ground access improvement program (AGAIP) for each "primary air carrier airport" within its planning area (per California Government Code §65081.1(a)). Primary air carrier airports are those that have over 10,000 annual enplanements. The single such airport in Humboldt County is the California Redwood Coast–Humboldt County Airport (formerly the Arcata-Eureka Airport), which had 56,682 enplanements in 2013; 51,668 in 2014; and 55,168 in 2015. This AGAIP was prepared during the 2014 update of the regional transportation plan (RTP), the first of HCAOG's RTPs to include an AGAIP; HCAOG has updated the AGAIP in conjunction with updating the RTP in 2017.

For preparing an AGAIP, California law (§65081.1) stipulates that:

> (b) The program shall address the development and extension of mass transit systems, including passenger rail service, major arterial and highway widening and extension projects, and any other ground access improvement projects the planning agency deems appropriate.
>
> (c) Highest consideration shall be given to mass transit for airport access improvement projects in the program.
>
> (d) If federal funds are not available to a transportation planning agency for the costs of preparing or updating an airport ground access improvement program, the agency may charge the operators of primary air carrier airports within its planning area for the direct costs of preparing and updating the program. An airport operator against whom charges are imposed pursuant to this subdivision shall pay the amount of those charges to the transportation planning agency.

FHWA & FAA GUIDANCE

HCAOG follows the "Airport Ground Access Planning Guide," (Guide) to prepare the AGAIP. The Guide was prepared jointly by the FHWA and FAA in 1996. Although the guide is old, its basic information still applies to current circumstances. This is the only guidance—federal, state or local—that HCAOG staff was able to find for this mandated program. Most of the information in this AGAIP comes straight from the Guide.

OVERVIEW OF THE PLANNING PROCESS

The FHWA and FAA deem the full planning process for an airport ground access improvement program to be long term, at twenty years or longer. "This time frame allows the thoughtful analysis of such issues as land use change and land use policy," the Guide states, "that require the longer time orientation."

The seven steps of the AGAIP planning process, summarized by FHWA-FAA, are:

1. Define the problem: What is the policy issue being addressed?
2. Given the understanding of the policy issue, establish performance measures to monitor and evaluate the program.
3. Collect data needed to apply performance measures.
4. Understand the system's patterns, demand, and performance, and estimate future demands.
5. Develop candidate strategies and actions.
6. Assess effectiveness of alternative strategies and actions; select cost-effective actions.
7. Implement selected policy interventions/strategies; monitor established performance measures; adapt management based on feedback.

Table 1 (next page) shows the purpose and examples of carrying out the seven steps. The AGAIP for ACV will follow the seven steps, revising, expanding, or combining steps as warranted. The defined problem (step one) and the improvements identified for solving the problem (step five), are described below under "ACV's Dominant Policy Issues." Stakeholders will continue with the next steps to further develop and implement the AGAIP. Stakeholders include, but are not limited to, County staff from the Aviation Division/ACV and Fly Humboldt!, the Humboldt County Aviation Advisory Committee, and HCAOG committees, as well as interested members of the general public.

AIRPORT GROUND ACCESS POLICY ISSUES

COMMON AIRPORT GROUND ACCESS ISSUES

Airports, in general, develop their airport ground access improvement programs to address one or more of the following issues or needs:

- **Localized air quality problems**, such that a jurisdiction is not meeting an air quality standard for a criteria pollutant or greenhouse gas emissions. Solutions could be to reduce motorized vehicle trips and to upgrade vehicles and machinery to more efficient and/or cleaner-fuel engines (e.g., replace all diesel equipment on the airside with electric or compressed natural gas).
- **Quality of multi-modal access & service for passengers**, where the airport managers are motivated to improve ground transportation choices for airport users, and reduce the number of motorized vehicle trips or single-occupancy vehicle (SOV) trips that the airport generates.

Table 1. FHWA's Seven-Step Airport Planning Process

Step	Purpose	Examples in Airport Access

One: Define Problem and Policy Context	Determine central policy issues faced by the airport. Its characteristic and setting defines what kind of performance is important to monitor.	The need to: expand airport capacity; provide accessibility and support economic development in key areas; lower airport-related total VMT (vehicle miles travelled); minimize environmental damage to neighboring communities.
Two: Define Performance Measures	Measures are selected only after agreement on the nature (and priority) of challenges faced in and around the subject airport. Establish the measures to be used to determine success or failure of the system performance.	Examples: traffic flow on the access roads; amount of choice offered to arriving passenger; percentage of region served by shared-ride services; percentage of passengers who arrive by other than private vehicle; cost and volumes for moving cargo and passengers.
Three: Collect Data Needed to Apply Performance Measures	Document both asset condition and level of performance, with a base-year inventory of intermodal systems' physical and operational characteristics.	Data sources to examine airport access patterns include: periodic ground access surveys, ridership and revenue data, and regional trip tables based on a simulated process. Operational characteristics may include time, cost capacity and usage.
Four: Understand Patterns and Demands	Utilizing performance measures data, understand existing and projected conditions and patterns in ground access.	Is demand skewed toward the central business district? Is congestion better or worse than it was five years ago? At times of greatest congestion, is the airport serving primarily resident non-business travelers or nonresident business travelers? What will conditions be like 5, 10 or 20 years from now?
Five: Develop Alternative Strategies and Actions	Determine what project or combination of projects would most effectively address the identified policy issue/need.	Policies range from curb striping that encourages non-SOV airport access, to creating exclusive right-of-way service
Six: Evaluate Alternative Strategies and Actions	Use established performance measures to analyze and evaluate alternatives; choose actions and policies to implement.	Evaluating alternative strategies can go beyond analyzing vehicle flows, and include concepts such as the mobility of people and goods, and accessibility to various destinations.
Seven: Implement and Monitor Selected Policy Interventions	Solve identified problem(s); understand effectiveness of implemented strategies. Revise strategies to increase or expand effectiveness.	A series of comprehensive ground access surveys are taken every five years, to track changes in different users'/market segments' travel behaviors.

- **Airport-related congestion in ground transportation** that negatively impacts roads on and near the airport. The traffic congestion may be contributing negatively to air quality, noise quality, mobility (e.g. travel times to/from airport for airport users and ground transportation services), fuel consumption, and may create localized impacts to nearby neighborhoods, as well as local to global environmental impacts.
- **Poor ground access for freight businesses** that use the airport. Bad circulation design, congestion, and lack of space are examples of factors that may be hindering goods movement and economic opportunities.
- **Poor ground access/circulation for emergency response**, which diminishes the effectiveness of emergency response and evacuations.
- **Airport expansion plans**, which opens opportunities for (and may require) redesigning ground transportation circulation, access, parking facilities, public transit services, etc.

- **A need to increase airport revenues/reduce costs**, which motivates airport managers to reconsider, for example, parking fees, shuttle services, or switching airport transport services to private or in-house operations.

ACV'S POLICY CONTEXT

The AGAIP shall be guided by and consistent with adopted plans, as well as updates, of the *Arcata-Eureka Airport Master Plan Report*, the *County of Humboldt Airport Land Use Compatibility Plan–Humboldt County Airports* (amended 1998), and the *Humboldt County Regional Transportation Plan*.

Arcata-Eureka Airport Master Plan Report (September 2005)

"Arcata-Eureka Airport's principal role," says the Master Plan Report, "is to serve as a base of operations for scheduled airline services." The airport's role is also to serve as:

- A source of scheduled passenger and cargo service
- A point of air access to the community
- A site for emergency access to the community
- A place to conduct business
- A base for Humboldt County region pilots

"For the foreseeable future," the report states,

> it is anticipated that the operational role of Arcata-Eureka Airport as a commercial airport will remain essentially the same as at present. … It is anticipated that with future development of the airport facilities that the airport will experience moderate growth over the long run.

Regional Transportation Plan (RTP) Update

HCAOG's regional transportation plan, "*VROOM*," (2017) states the goal and objectives for the region's transportation system, which are:

> **Overall Goal**: HCAOG's goal is for Humboldt County to have a comprehensive, coordinated, sustainable, and balanced multi-modal transportation system, so that people in the region can travel and move goods safely and efficiently 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.
>
> To achieve the overall goal and objective, HCAOG will pursue six main objectives/planning priorities for planning projects and programs. The objectives support one another and will apply to each transportation mode, framing each mode's policies. In alphabetical order, the objectives are:
>
> - Balanced Mode Share/Complete Streets
> - Economic Vitality
> - Efficient & Viable Transportation System
> - Environmental Stewardship
> - Equitable & Sustainable Use of Resources
> - Safety

Below are policies that set a national context for developing AGAIPs (Title 49-Transportation, Subtitle VII-Aviation Programs, (USC §47101; laws in effect on March 10, 2014).

(a) General. It is the policy of the United States

(5) to encourage the development of intermodal connections on airport property between aeronautical and other transportation modes and systems to serve air transportation passengers and cargo efficiently and effectively and promote economic development;

(6) that airport development projects under this subchapter provide for the protection and enhancement of natural resources and the quality of the environment of the United States;

(7) that airport construction and improvement projects that increase the capacity of facilities to accommodate passenger and cargo traffic be undertaken to the maximum feasible extent so that safety and efficiency increase and delays decrease;

(b) National Transportation Policy.

(1) It is a goal of the United States to develop a national intermodal transportation system that transports passengers and property in an efficient manner...

(3) A national intermodal transportation system is a coordinated, flexible network of diverse but complementary forms of transportation that transports passengers and property in the most efficient manner. By reducing transportation costs, these intermodal systems will enhance the ability of the industry of the United States to compete in the global marketplace.

(4) All forms of transportation, including aviation and other transportation systems of the future, will be full partners in the effort to reduce energy consumption and air pollution while promoting economic development.

(5) An intermodal transportation system consists of transportation hubs that connect different forms of appropriate transportation and provides users with the most efficient means of transportation and with access to commercial centers, business locations, population centers, and the vast rural areas of the United States, as well as providing links to other forms of transportation and to intercity connections.

(6) Intermodality and flexibility are paramount issues in the process of developing an integrated system that will obtain the optimum yield of United States resources.

General Conformity Rule for Air Quality

The State of California, federal government, and regional and local agencies set air quality standards, which may be different for some pollutants. A jurisdiction that meets an air quality standard is "in attainment" for that pollutant; otherwise it is "in non-attainment." Air quality in Humboldt, Del Norte, and Trinity County is regulated by the North Coast Unified Air Quality Management District. The air in the district "is considered to be 'in attainment' of state and federal ambient air quality standards except for the State's 24-hour PM_{10} standard. The two pollutants of greatest concern are ozone and particulate matter" (http://ncuaqmd.org, April 3, 2014).

The FHWA-FAA Guide gives direction regarding the federal General Conformity Rule:

> It is important to understand the type of air quality impacts that an airport must examine. The U.S. Environmental Protection Agency (EPA) has made it clear that the general conformity rule will cover new emissions, both direct and indirect, which the airport agency can practicably control, and which it will maintain control over due to a continuing operational responsibility.

> Therefore, airports should check with the appropriate FAA Airports District Office to determine the need for determining air quality impacts under the general conformity rule.
>
> The regulation establishes that when an airport operator intends to spend federal funds on a project within the boundaries of the airport, the air pollution emissions impacts experienced off the facility must be documented to the standards required by the State Implementation Plan (SIP). In short, this means that airport operators must become involved in developing mitigation measures that minimize the growth of SOV (single-occupancy vehicle) travel.

Relatively more recently, the FAA and US EPA directed a "Proactive Role for Airports," including the following:

> First, general conformity evaluations are generally based upon emissions estimates. Therefore, EPA and FAA encourage airport operators to develop comprehensive emissions inventories for their facilities as well as estimates of future activity levels and emissions. This should include information on all sources of emissions, including passenger and employee commuting, aircraft, ground support equipment (GSE), stationary sources, and construction activities. Next, operators should work closely with local and State air quality agencies to ensure that the SIP accurately reflects all emissions at the airport and growth rates for operations at the airport. Airport operators should also evaluate the sources of pollutant within their control to determine how the pollution can be reduced or eliminated. This information can be very useful in designing a project to keep the emissions below the de minimis levels or to mitigate the increase in emissions from the project. (FAA & EPA, 2002)

ACV'S DOMINANT POLICY ISSUES

HCAOG staff consults with the Humboldt County Aviation Advisory Committee (HCAAC) and County Aviation Division staff to identify and confirm ACV's ground access problems, potential solutions, and dominant policy issue(s).[1] They have confirmed that this comment in the FHWA-FAA Guide applies to ACV: "For the airport manager in a region that has attained the national air quality standards, and that does not suffer from significant levels of congestion, the ground access issue turns to the standards of accessibility experienced by the user." The dominant ground transportation issue is the lack of pedestrian and bicycle connectivity to access the airport terminal from adjacent properties.

Access and circulation infrastructure to and at the airport consists of the following:

- Airport Road provides direct access to and from the airport and connects to the nearby U.S. 101 Interchange and Central Avenue (a major arterial road). Anecdotal testimony reports that most drivers drive faster than 35 mph, the posted speed limit. A portion of Airport Road on the southwest side (across from the airport) has a curb and a tread-worn pedestrian trail, but it is not continuous. The northeast side of Airport Road, which accesses the airport, has no crosswalk, sidewalk/trail or curb. Airport Road has striped shoulders, but no designated bikeway.
- Within the airport grounds, Airport Loop Road provides direct access to the terminal. There is no sidewalk at the intersection of and Airport Loop Road and Airport Road. Airport Loop Road does not have sidewalk or bikeway access to the terminal.

[1] Discussions during Humboldt County Aviation Advisory Committee's regular monthly meeting, October 2017.

The ACV airport currently has modest multi-modal amenities, as follows. It 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. At the airport Business Park, a quarter-mile from the airport, bike rentals (including a helmet) are available for guests of the Holiday Inn Express & Suites.

The HCAAC has identified infrastructure projects that would serve to improve pedestrian and bicycle access to and from the airport. The improvements are conceptual and need further study to determine scope, feasibility, design, and costs. The HCAAC has prioritized the proposed projects as follows:

1) Install a pedestrian crosswalk at Airport Road and Airport Loop Road.
2) Improve walkways from Airport Road to the terminal.
3) Install sidewalk on Airport Road.
4) Improve the walkway from the Airport Business Park (Concorde Drive and Boeing Avenue) to the airport (Airport Road).
5) Provide an overhang to cover passenger loading/unloading zone.
6) Provide covered walkways to terminal (within airport grounds).
7) Install bicycle storage.

The projects could potentially be combined with larger construction projects and, as such, may be implemented in different order than listed. The proposed project to install sidewalk on Airport Road was added to HCAOG's Regional Transportation Plan (RTP), *VROOM*, in the 2017 update. The project is included in the project list (Table *Streets*-4) in the Complete Streets Element of *VROOM*.

PERFORMANCE MEASURES

After the airport manager and the advisory committee define the dominant policy issue(s) for the AGAIP and the corresponding intervention strategies, they will choose the parameters that will best measure and evaluate how well the strategy is doing. These parameters, or performance measures, evaluate the strategies and the system changes that the strategies are meant to induce.

The FHWA-FAA Guide presents an example of Logan International Airport, in Boston, where the policy issue was the environmental damage to communities located adjacent to the airport. The Boston planners wanted a policy and an intervention strategy to minimize the number of people who were driving through the neighborhoods to get to the airport. They focused on measuring the relationship between the primary mode choices and the actual number of vehicle trips using the

roadways near the airport (i.e., average number of vehicle trips per passenger, VTPP).[2] The higher the VTPP is for a mode, the higher is airport-related congestion and air pollution. (For regions that do not have to examine a wide variety of policies to deal with congestion and air quality issues, the VTPP performance measure may require a more detailed level of analysis than is warranted.)

Table 2. Ground Access Vehicle Trips per Air Passenger Trip

MODE	VTTP*
Pick-Up/Drop-Off	1.29
Taxi	1.09
Parking	0.74
Rental Car	0.69
Door-to-Door Shuttle	0.33
Scheduled Bus	0.10
Rapid Transit	0.0

*Vehicle trips per air passenger Source: FHWA-FAA 1996

The FHWA-FAA Guide summarizes Boston's program thusly:

> Table 2 shows that in the common pick up/drop off mode, 1.29 vehicle trips are generated for each one-way air passenger trip. For the drive/park mode, only 0.74 vehicle trips are generated per air passenger trip. Therefore, one intervention policy might be to encourage the pick-up/drop-off trip to become a drive alone/park trip. A vehicle with two persons—one of whom will then return home after dropping off the air passenger—is not considered to be more efficient than a vehicle with one passenger going directly to the parking garage. Table 2 shows that moving 100 passengers from drop-off mode to park-alone mode would decrease vehicle trips by 55. (Similarly, moving 100 passengers from taxi to door-to-door shuttle would decrease vehicle trips by 41.)
>
> In this innovative evaluative method, any policy action that has the effect of moving the passenger to a lower ranking on the levels shown in Table 2 is considered to be positive, and vice-versa. For planning multimodal ground access, this method is exemplary in that it is modally blind and can be applied to a wide variety of possible policy interventions.
>
> The policy implications of the data on Table 2 are extremely important; for the data shows that influencing modal choices within the auto mode must be part of comprehensive access strategy, in addition to the traditional study of shifting passengers from automobiles to transit.

Other performance measures, of course, can be used to evaluate the AGAIP's policies and strategies. Parameters might include total travel time, cost and volumes for moving cargo and passengers, capacity versus demand, accidents, perceived quality and the average time to transfer people or freight from one mode to another. Table 3 shows examples from the FHWA-FAA Guide.

[2] Developed by Boston Central Transportation Planning staff based on information from a 1987 Air Passenger Survey. (FHWA-FAA 1996)

Table 3. Examples of Performance Evaluation Measures

Goals	Objectives	Performance Measures	Data Needed	Source of Data
Mode Split to Non-SOV* Modes	Increase balance of use across ground modes.	Percent of total airport users to shared ride services.		User surveys, as updated with mode-specific reports.
Existence of Choices for Ground Access	Have non-motorized and HOV* motorized options to airport.	Number and availability of ground access options, including pedestrian and bicycle facilities that connect to airport.	Inventory of existing facilities and services.	Site inventories, schedules, operating agreements, permits etc.
Accessibility	Minimize travel time.	Travel time to major destinations {This measure requires a method of calculating change in door-to-door times.}	Airport and state transportation facility information, population and employment data, regional transportation simulations.	State, regional, and local agencies.
	Optimize ADA access for ground transportation	Extent of ADA compliance	Airport compliance schedules	On-site inventory of compliance
Quality of ground service to airport.	Provide high quality ground access.	Headways, layover times, HOV vehicle cleanliness. Speeds and volume-to-capacity ratio (V/C) on transit, access roads, bikeways, walkways, parking lots. Structural condition, design standards.	Condition of access facility, perceptions and ratings from ridership/users.	Field examinations/ inspections, performance audits, maintenance logs, user surveys. Traffic and ridership counts, capacity data.
Affordability/ Cost Minimization	Minimize social costs.	Subsidies and environmental costs.	Revenue recovery, quantified pollution costs.	FAA summaries including subsidies, environmental models.
	Minimize capital costs.	Meet short-term budgets. Meet long-term budgets (assumes long-range capital improvements, minimal/no backlog maintenance).	Cost/revenue balances (budgets), cost models, condition ratings.	Master plans, construction cost data; inventory.
Connectivity Between Modes	Promote easy transfer between modes.	Service availability between modes; time and distance of transfer between modes less than N minutes and N feet.	Layover times travel times	Schedules/timetables, facility and service specifications, plans, surveys.
Convenience	Make transit as convenient as possible.	Availability of remote intermodal ticketing and luggage support.	Existing ticketing choices.	Inventory of services.
Mobility	Make bus/airport shuttles competitive with autos.	Ratio of travel times.	Travel times and speeds, average time to transfer people or freight from one mode to another.	Travel time studies, schedules, surveys.
	Provide capacity for peak hour loads	Extent of vehicle queuing, and overall delay	Quantification of observed delay/back-up.	Carriers' logs of on-time performance
Reliability	Improve on-time performance at terminals	Percent of ground transport on-time departures.	On-time performance.	Carriers' internal logs.
Safety	Improve safety in motion connecting modes.	Accidents per passenger mile, community concerns.	Accident frequency and severity data, community perceptions/experiences.	Sheriff's/Police Depts. and FAA records, surveys, interviews.

*SOV=single occupancy vehicle; HOV=high occupancy vehicle. Source: FHWA-FAA 1996.

ALTERNATIVES FOR IMPROVING AIRPORT GROUND ACCESS

AIRPORT CIRCULATION

The different transportation modes that serve multi-modal ground access are:

- Private automobile, motorcycle (drop-off/pick-up (kiss-n-ride), park-n-ride, short/long-term/employee parking, package drop-off, rental car)
- Pedestrian (abled and disabled)
- Public transit buses (local, express, intercity, tour, paratransit)
- Private shuttles, limousines, taxis
- Bicycles
- Delivery vehicles (packages, mail, freight, baggage)

When planning, designing, and managing a multi-modal ground access system, airport planners and managers consider the balance and circulation of modes to and around the airport. The components of airport land-side circulation include the following:

- Airport Roads
  - Primary airport access roads
  - Terminal area access roads
  - Recirculation roads
  - Terminal frontage roads
  - Service roads: General-use and restricted-use
- Public Transportation Areas
  - Bus stops
  - Bus Pullouts
  - Bus staging and parking areas
- Rental Car Areas
  - Parking area entrances and exits
  - Access road
- Terminal curb areas
  - Curb frontage
  - Sidewalk platforms
  - Terminal entranceways
  - Pedestrian crossings and walkways
- Public Parking Facilities
  - Short-term and long-term parking areas and/or structure
  - Parking lot entrances and exits
- Taxicab, Shuttle, and other commercial vehicles
  - Terminal curbside for pick-up and drop-off
  - Staging and parking areas
  - Storage (staging) and dispatching of taxi cabs,

MARKET SEGMENTATION

Air travelers can be segmented by purpose of their trip (e.g., business or non-business) and residency (e.g., resident of airport service area or visitor). The trip purpose will determine the importance of different ground access modes at a given airport. For example, airports that primarily serve tourists often have higher taxicab and rental car use than other airports. Residents are more likely to use a private automobile to get to and from the airport. Airport employees are an important market segment that accesses the airport by transit.

The FHWA-FAA Guide reports on five large airports in areas with mature transit systems:

> Between 10 and 21 percent of employee trips to these airports use transit, and less than 10 percent arrive as auto passengers. Even though these airports are in metropolitan areas with the best transit systems in the country, over 70 percent of the airport employees drive to work. …(T)hese data illustrate the importance of different modes

for providing service to different market segments and the importance of market segmentation for airport access planning.

Below are excerpts of what the FHWA-FAA Guide suggests for improving airport ground transportation for:

- Access roads (off-airport, near-airport, and on-airport)
- Pedestrian and bicycle
- Public transit
- Automobile parking
- High occupancy vehicles (HOVs)
- Travel demand management (TDM)

ACCESS ROADS

When designing for multi-modal access, airport circulation designs should:

- Separate pedestrians and vehicular traffic.
- Establish pedestrian/bicycle networks.
- Establish bicycle travel ways, separated from auto and bus lanes whenever possible.
- Design pedestrian crossings with adequate sight distance, signing, and pavement markings to maximize safety.
- Minimize the number of at-grade crossing points. Especially where the number of conflicts between pedestrians and vehicles are expected to be high, consider grade-separated pedestrian walkways.

"Not to be overlooked when examining the regional context of airports are needs related to emergency vehicle access to and from airports. To ensure adequate emergency medical service response times, the highway segments that constitute the shortest routes between hospitals/major medical centers and the airport, as well as redundant routes, should be identified and considered for improvements. In addition, the shortest routes from existing and planned local fire and rescue stations that support the airport should be identified and reviewed. Potential highway capacity bottlenecks for these vehicles should be identified and mitigated through geometric or operational changes" (FHWA-FAA 1996).

PEDESTRIAN & BICYCLE

Virtually all trips include walking, so almost all airport users will be pedestrians for at least a leg of their journey. Bicycle travel will be used by airport passengers, employees, and visitors, too, although employees are presumably the most likely. Bicycle trips will also be combined with transit trips (e.g., a transit rider will being his/her bicycle on the bus to the airport).

For airports, typical ground access enhancements include the following:

- Provide covered walkways from public parking lots to entrances of terminal buildings.
- Improve markings and lighting of pedestrian routes.
- Improve ADA access from parking to curbside to terminals.
- Install secured bicycle parking (short-term, long-term, covered, lockers).
- Improve pedestrian and bicycle trails and walkways, especially those that connect intermodal terminals.

PUBLIC TRANSIT

Multiple-stop routes serving the airport, because of frequency of stops and associated travel times, are usually less attractive to airport passengers and visitors than to airport employees. Public transit's "marketability," generally, is considered high for employees, medium for resident passengers, and low for non-resident passengers.

The FHWA-FAA Guide offers these ingredients for success:

- Express or semi-express service to major activity areas (e.g., central commercial area/business district, tourist centers, residential areas with high density of airport employees).
- Convenient schedule aligned with airport peak times (for air passengers and airport employees).
- Competitive fare (transit fares cost less than parking).
- Sheltered waiting areas for shuttle/bus stops.
- Good visibility of signs and markers denoting shuttle/bus stops.
- Passive and active security features (e.g., video or audio monitoring of platforms and station areas, well-lit corridors, visible elevators, roving security personnel).

HIGH OCCUPANCY VEHICLES (HOVS)

High occupancy vehicle services at airports are usually managed by the private sector. The most common HOV services are door-to-door shuttles (i.e. shared ride vans), courtesy vehicles, and charter buses. Large (international) airports will often manage HOV inter-terminal and parking shuttles.

The service and operational issues that should be considered when designing HOV services include:

- Maximize passenger comfort and convenience on vehicles (e.g., seating configuration and capacity, baggage storage space, the width and height of vehicle doors and steps, passenger shelter amenities, speed and reliability of service).
- Minimize the frequency of stops, necessary transfers, and dwell times.
- Reserve curb space for boarding/de-boarding at convenient, visible locations.
- Develop desired performance measures (e.g., passengers per hour, vehicles per hour, minimum headway).
- Establish operating procedures, including information regarding passenger pickup and drop-off, driver and vehicle requirements, and staging areas.
- Consider the needs of disabled passengers in the provision of services (e.g., lift-equipped vehicles, audio information systems or driver announcements of stops, color and size of passenger wayfinding signs and symbols).
- Identify fare collection methods and procedures that minimize passenger delay.

Good wayfinding systems include:

- Clear signage and graphics, posted in highly visible locations at frequent intervals throughout the terminal to facilitate passenger wayfinding.
- Information describing fares, schedules, and best routes to popular destinations.
- Pathways that allow passengers to identify their destination and minimize their reliance on signs.
- Staffed information booths to supplement available signs and computerized terminals.

AUTOMOBILE PARKING

Generally speaking, options for improving airport parking conditions include the following:

- Reallocate space to match parking demand (air passenger, visitor, employee, rental car company).
- Modify parking operations or rates.
- Increase parking capacity by redesigning and/or constructing facilities.

Airport parking can be allocated for different users (e.g., employees, air passengers, rental cars), different parking durations (e.g. long term, short term), or different levels of service (e.g., self-park, valet). Sometimes an airport will have enough total spaces, but too much is allocated to one user group and not enough to the other. For example, if the airport needs more long-term public parking, more spaces could be created by moving employee lots or converting them to long-term/remote parking lots.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation demand management measures are designed to reduce the number of vehicle trips made, by shifting trips to higher-occupancy modes. Employees and travelers are the two major travel markets that access an airport, and each group demands different travel times and peak volume capacities. "A study of California airports estimated that 40 percent of all vehicle trips to the airport and 20 percent of all airport-related vehicle miles traveled (VMT) are by employees," says the FHWA-FAA Guide. "These estimates are probably transferrable to airports nationwide…" Most TDM measures are designed to encourage employees to use HOVs.

The FHWA-FAA Guide also remarks that,

> Having a TDM program successfully reduce air passenger ground access trips is considerably more difficult than for employee trips. Air passengers are concerned about getting to and from the airport as quickly, conveniently and reliably as possible. Air passenger traveling on business, in particular, are often less price-sensitive to the cost of the access trip, including parking charges, and are willing to pay for the convenience of taking a taxi or parking at an airport. However, experience with work travelers has shown that if the cost of driving alone is increased and quality alternatives are provided, passengers making business and pleasure trips will be more likely to shift to higher occupancy modes.

Some typical TDM strategies, described more below and in Table 4, include:

- Managing High Occupancy Vehicles (HOV)
- Financial incentives
- Information and marketing
- Parking management
- Airport access fees and circulation control

Managing HOVs

Employers can support vanpooling by:

- Providing ride-matching assistance
- Buying or leasing vans for employees use

- Subsidizing employee ownership or lease
- Subsidizing vanpools or riders by paying operational expenses and parking costs
- Insuring vans
- Maintaining and/or fueling vehicles

Financial Incentives

Employers can offer positive economic incentives to shift SOV drivers to ridesharing. Employees who use car/vanpools, transit, bicycles, or other alternatives to driving alone, can be enticed and rewarded with direct and indirect financial incentives. Rideshare subsidies, for example, pay employees either a pre-set amount, a reimbursement for actual travel costs, or pre-paid transit passes or coupons. Indirect financial incentives are measurable benefits with monetary, but non-cash, value. Examples of indirect financial incentives are: use of fleet vehicles for ridesharing; subsidized fuel or maintenance (provided on-site or with vouchers accepted at local gas stations); extra vacation time accumulated; "catalog points" awarded for ridesharing and redeemable for merchandise; free or discounted equipment (e.g., walking shoes, bicycles, etc.).

Parking Management Program

Perhaps the most effective TDM measure for airports is managing parking. Higher charges for airport parking will encourage employees and some passengers to look for alternatives to driving their automobile to the airport. However, there is a risk that higher parking prices will increase the drop-off of passengers, increasing airport-related congestion and air pollution.

Table 4. TDM Strategies for Airport Ground Access

TDM Strategies	Characteristics	Market Segment				
		Employee	Visitors/ Tourists	Local Residents	Airport Visitors	Meeter/ Greeter
Parking Prices/ Fees	Parking rates can change based on modes or time of day.	X	X	X	X	X
Reduce Parking Supply	Limit amount of parking available.	X	X	X	X	X
Employer-Sponsored Ride-Matching Program	Program matches employees who want to use commute alternatives.	X				
Preferential Parking for Ride Sharing	Reserved parking spaces near entrance to building/work site for employees who rideshare.	X				
Guaranteed Ride Home	Commuters using a high-occupancy mode get free or subsidized emergency transportation, generally by taxi or rental car, for the trip home.	X	X	X		X
Information, Marketing, and Promotions	Post information via kiosks, bulletin boards, posters, flyers, website. Contests, prize drawings, rideshare fairs, commuter and bike clubs.	X	X	X	X	X
Transportation Coordinator	Offers individual trip planning assistance, and actively encourages HOV modes through marketing and information.	X	X	X	X	

Source: FHWA-FAA 1996.

SOURCE MATERIAL

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APPENDIX B

Addendum to the Final Environmental Impact Report

Prepared for the Humboldt Regional Transportation Plan 2013-14 Update

*VROOM…*Regional Transportation Plan 2017 Update

Humboldt County Association of Governments

ADDENDUM

to the Final Environmental Impact Report

prepared for the Humboldt Regional Transportation Plan 2013-14 Update

SCH# 2013102063

INTRODUCTION

All counties in California have a transportation planning agency, officially designated as either a metropolitan planning organization (MPO) or a Regional Transportation Planning Agency (RTPA), based on the county's population. HCAOG is Humboldt County's designated RTPA; it is governed, per a joint powers agreement of 1968, by the seven incorporated cities and the County of Humboldt.

The RTPAs core functions are to "maintain a setting for regional decision-making" and "involve the public in this decision-making" (CTC 2017). In tandem with that function, RTPAs must prepare three documents:

- an annual Overall Work Program;
- a Regional Transportation Improvement Program (RTIP), a five-year program proposal of projects that regions prepare, in coordination with Caltrans, for inclusion in the State Transportation Improvement Program; and
- a long-range plan, the Regional Transportation Plan (RTP), which HCAOG must update every four years.

HCAOG's RTP, *Variety in Rural Options of Mobility* ("*VROOM…*"), covers a 20-year planning horizon. *VROOM…2017* updates the version that HCAOG updated in 2013-2014 (and adopted in August 2014). In conjunction with the 2014 update, HCAOG certified the Final Environmental Impact Report (EIR) in July 2014 (State Clearinghouse #2013102063). HCAOG has assessed the potential environmental impacts of the 2017 update of the RTP *VROOM…*, and has documented the assessment and findings in an addendum to the Final EIR. An EIR addendum, as a specific document defined by CEQA statute, is discussed below.

PURPOSE OF AN ADDENDUM TO A CERTIFIED EIR

WHEN EIR ADDENDA APPLY

HCAOG is the Lead Agency for adopting the Humboldt County RTP. When a Lead Agency has certified an EIR for a project (or plan) and subsequently the circumstances of the proposed project change, CEQA Guidelines specify when the Lead Agency shall prepare a "subsequent" EIR or an "addendum" to the EIR. Briefly stated, an addendum is appropriate where the changes to the project or plan do not pose a substantial change to the environmental impacts as analyzed in the

Section 15162: When a Subsequent EIR is Required

The CEQA Guidelines Section 15162 states that when an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the Lead Agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
   a. The project will have one or more significant effects not discussed in the previous EIR or Negative Declaration;
   b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
   c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
   d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

previously certified EIR. (Or, more technically, an addendum "can be used where there is no substantial evidence that the modification would result in a new or substantially more severe impact" (AEP 2017).)

A subsequent EIR is required, per Section 15162, if changes to the proposed project or project setting would potentially cause "significant environmental effects or a substantial increase in the severity of previously identified significant effects" that were not addressed in the EIR that the Lead Agency certified. (See sidebar for full text of Section 15162.)

If project (or plan) changes are minor with no change in scope and they will not result in any new or substantially more severe significant effects than were identified in the certified EIR, then, per CEQA Guidelines Section 15164, the Lead Agency or responsible agency shall prepare an addendum to a previously certified EIR. Section 15164 also allows that: "(c) An addendum need not be circulated for public review but can be included in or attached to the Final EIR," and "(d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project" (or plan).

PURPOSE OF THE RTP EIR ADDENDUM

The purpose of this Addendum is to update the *Humboldt Regional Transportation Plan Update 2013/14 Update–Final Environmental Impact Report* (FEIR; State Clearinghouse #2013102063) based on changes proposed to the RTP "*VROOM…"* as part of the 2017 update. This Addendum to the FEIR evaluates the environmental impacts that could result from minor changes in the RTP update's proposed policies and action plans (or project lists). The FEIR's sections were reviewed and updated as appropriate to confirm that no new impacts would occur as a result of implementation of the Regional Transportation Plan, as described in this Addendum. Conditions of the regional transportation system have not changed substantially since the FEIR was adopted; likewise,

the RTP 2017 update proposes policies and actions essentially identical in scope and intent as that envisioned in the FEIR. The proposed RTP update will not result in more significant impacts; no changes to and no new mitigation measures are required.

The proposed plan, as updated, (1) is not anticipated to result in new significant impacts; and (2) would not require major revisions to the previously certified FEIR; therefore, impacts are deemed consistent with those in the FEIR. None of the conditions of Section 15162 have occurred (see sidebar), which would have compelled preparing a subsequent EIR; therefore, this Addendum to the certified FEIR is consistent with CEQA Guidelines Sections 15162 and 15164.

FINAL EIR & RTP BACKGROUND

PROGRAM FEIR BACKGROUND

HCAOG is updating the 20-year Regional Transportation Plan, *VROOM…*, to comply with its four-year update cycle. HCAOG's last RTP update was prepared during 2013-2014. Before adopting VROOM in August 2014, the HCAOG Board certified the Final Program EIR in July 2014 (State Clearinghouse #2013102063).

For the environmental review in 2013-14, HCAOG staff prepared an Initial Study to determine which environmental factors required further analysis in an EIR. The Initial Study (Appendix A of the FEIR), determined that the RTP 2014 would have a less-than-significant adverse impact (or less-than-significant when the identified mitigation measures were incorporated with implementation) on these environmental topics, which therefore did not warrant further analysis in an EIR:

Aesthetics
Agricultural Resources
Cultural Resources
Hazards and Hazardous Materials
Land Use and Planning
Mineral Resources
Population and Housing
Public Services
Recreation
Utilities and Service Systems

After conducting the Initial Study, HCAOG analyzed these environmental topics in an EIR:

Air Quality
Biological Resources
Environmental Justice
Geology and Soils
Greenhouse Gas Emissions
Hydrology and Water Quality
Noise
Transportation/Circulation

as well as Growth-Inducing Impacts and Irreversible Effects.

Program EIR: Tiered Environmental Assessments

Program EIRs serve as part of the "tiering" approach for CEQA analysis. Program EIRs readily apply to RTPs because RTPs are largely policy documents and their proposed project are mostly conceptual and will almost always go through additional project-level environmental review. The 2014 FEIR explains its function and potential use as a Program EIR; we reproduce part of that explanation below, revised for the proposed RTP update:

> Analysis of site-specific impacts of individual projects is not the intended use of a program EIR. Many specific projects in the RTP 2017 update are not currently defined to the level that would allow for such an analysis. Individual, specific environmental analysis of each project will be undertaken as necessary by the appropriate implementing agency prior to each project being considered for approval at the local level. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:
>
> - Transportation projects developed during the engineering design process.
>
> Project sponsors implementing transportation projects would undertake future environmental review for projects in the proposed RTP 2017 update. These sponsor (or implementing) agencies would include the cities within Humboldt County as well as Humboldt County, Caltrans, and public transit agencies. In sponsoring individual projects, local agencies may choose to take advantage of the streamlining benefits of the Program EIR, or to engage in their own environmental review without use or reference to the Program EIR. If they so choose, these agencies would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this Program EIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors. If the lead agency finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects (and if necessary project-specific mitigation measures) specific to the project, or its site, that have not been considered in this program EIR (FEIR page 1-7).

The FEIR and the Addendum include a programmatic review of the Action Plans of each RTP Element, assessing—at the programmatic level—the environmental impacts of projects listed in the RTP (the Addendum reviews only those projects that are newly proposed in the 2017 update; it does not duplicate the FEIR's review). As discussed earlier, the Program FEIR's and Addendum's level of analysis is consistent with the conceptual level of the projects in the RTP.

The FEIR programmatically reviewed all projects, some of which could have significant impacts, and identified relevant mitigation measures that could be used by local agencies to mitigate impacts to a less-than-significant level. When the respective implementing agencies move forward on their individual projects (e.g., through actual project design), they will undertake analyzing the potential environmental impacts of each project individually and specifically, as applicable, in order for their own agency's decision-making body to consider approving the project.

Further, as noted in the 2014 FEIR (Section 2.0), the Program EIR analysis does not apply to projects for which funding is not programmed through HCAOG, including any Caltrans or Harbor District related projects.

PROJECT DESCRIPTION: *REGIONAL TRANSPORTATION PLAN 2017 UPDATE*

The proposed project is the update of the Regional Transportation Plan (RTP) for Humboldt County, uniquely referred to as "*VROOM…*" (for *Variety in Rural Options of Mobility*). The RTP 2017 update serves the same purpose as the previous RTPs for Humboldt County[1] in that (1) it is a long-range planning and programming document aimed at achieving a coordinated and balanced regional transportation system, and (2) HCAOG developed the RTP 2017 consistent with current RTP guidelines (CTC 2017) and pursuant to applicable State and federal laws (Government Code §65080 et seq. of Chapter 2.5, federal legislation; U.S. Code, Title 23, §134 and §135 et seq.). HCAOG adopted the last RTP in August 2014 (also called *VROOM…*).

The Humboldt regional transportation system includes, but is not be limited to, transportation network components of the highways, streets, and roadways; public transportation; active transportation including bicycle and pedestrian modes; commuter trails (i.e. as used for transportation); goods movement (rail, truck, and marine); aviation facilities, and tribal transportation facilities. *"VROOM…"* covers these modes in distinct elements (chapters) that identify goals, objectives, and policies; assesses needs, and proposes an action plan (short-term and long-term projects). As well, *"VROOM…"* covers provisions for land use and transportation connections, emergency transportation coordination, air quality, greenhouse gas emissions and related climate-change and sea-level rise impacts, and includes a Tribal Transportation Element, which was prepared in collaboration with the Tribal members of the Technical Advisory Committee (TAC). *"VROOM…"* includes the required Financial Element, which identifies revenue sources (local, state, and federal funding), and projected costs and revenues, noting any projected funding deficits under both constrained and unconstrained project scenarios.

As described in the 2014 FEIR:

> The plan's overall goal is for Humboldt County to have a comprehensive, coordinated and balanced multi-modal transportation system, so that people in the region can travel and move goods safely and efficiently by the modes that best suit the individual and society at large. HCAOG's overall objective is to program all funds based on multi-modal transportation goals and objectives, and needs and priorities as established in the Regional Transportation Plan. HCAOG decides how to program transportation funds based on multi-modal goals and objectives, and needs and priorities as established in the RTP. The RTP's policies and proposed projects pursue six main objectives/planning priorities (in alphabetical order), which the RTP applies to each mode:
>
> - Balanced Mode Share/Complete Streets
> - Economic Vitality
> - Efficient & Viable Transportation System
> - Environmental Stewardship
> - Equitable & Sustainable Use of Resources
> - Safety (FEIR pages ES-1, ES-2).)

[1] 1998-00, 2000-02, 2002-04 and 2004-06, 2008, and 2014.

New policies that the 2017 update proposes to add to the RTP are:

2. Complete Streets Element

Policy CS-8 HCAOG will accelerate programming for regional projects that retrofit existing roads to provide safe and convenient travel by all users.

Policy CS-9 HCAOG supports a "fix it first" priority of protecting and preserving what we have first when allocating resources to roadways and other transportation assets.

Policy CS-13 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.

Policy CS-15 HCAOG supports roadway design standards that increase bicyclist and pedestrian safety and will work with local jurisdictions to help implement innovative designs and engineering projects that have been shown to improve bicyclist and pedestrian safety.

3. Commuter Trails Element

Policy Trails-3 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.

Policy Trails-7 The regional trails network shall provide travel options for residents and visitors, with equitable access for transportation-disadvantaged populations.

4. Tribal Transportation Element

No new policies proposed.

5. Public Transportation Element

Policy PT-6 HCAOG encourages transit providers to promote and accommodate bicycles on transit vehicles, and to provide secure bicycle parking facilities at transit stops and transportation centers. {formerly Policy 1.4 in the adopted *Regional Bike Plan 2012*}

6. Aviation Element

Policy AS-6 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.)

7. Goods Movement

Policy GM-11 (Goods Movement) HCAOG shall support projects that improve intermodal freight access and reduce congestion, especially along freight corridors. {*California Transportation Plan 2040*}

8. Emergency Transportation
No new policies proposed.

9. Financial Element
Not applicable.

10. Global Climate Crisis Element *(New element)*
Policy C-1: Put forth strategies that shift travel to be more transit-focused and rideshare-oriented, to achieve more road safety benefits. *(CTP 2040 recommended policy)*

Policy C-2 Promote active transportation, ridesharing, rail, and public/mass transit promoting policies for the co-benefit of reducing air pollution when they replace motor vehicle trips. *(CTP 2040 recommended policy)*

Policy C-3 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, and Local Coastal Programs. *(CTP 2040 recommended policy)*

Policy C-4 HCAOG will support and plan transportation and projects that provide safe and convenient travel modes for people who cannot or choose not to drive.

Policy C-5 HCAOG will promote and support land use policies that accommodate or reinforce planning, designing, and building a truly multimodal transportation network.

Policy C-6 HCAOG shall encourage partnerships to develop adaptation strategies that address sea-level rise in Humboldt County.

The RTP 2017 update's proposed regional projects that are new from the RTP 2013/14 Update are listed in the following:

Table *Projects*-1 lists new regional projects for highways, streets, and roads (for driving, bicycling, and walking modes) that are proposed in the Complete Streets Element.

Table *Projects*-2 lists new regional trails projects proposed in the Commuter Trails Element update (serving transportation needs not just recreational).

Table *Projects*-3 lists new proposed regional public transportation projects proposed in the Public Transportation Element.

Table *Projects*-4 lists new regional aviation projects proposed in the Aviation Element.

There are no new projects proposed for the Action Plans of the Emergency Transportation Element, Tribal Transportation Element, or Goods Movement Element.

Table *Projects*-1 **New Complete Streets Projects Proposed in the HCAOG RTP 2017 Update**

Jurisdiction	Location	Project Description
Blue Lake	Railroad Ave from Greenwood Ave to Hatchery Road	Overlay and pedestrian improvements, rehab and reconstruction

Jurisdiction	Location	Project Description
Blue Lake	First Ave from Greenwood Ave to I Street	Rehabilitation and reconstruction with pedestrian improvements
Eureka	Henderson St from I St to Fairfield St	Road rehabilitation, ADA, bike lanes, bus pullouts, storm drains
Eureka	Fairway Dr from City limits to Ridgecrest Drive; Campton Road from City limits to Oak St	Road rehabilitation, ADA, bicycle facility
Eureka	H & I Street Corridors	Road rehab, ADA, bicycle facility and bus pullouts
Fortuna	U.S. 101/12th Street Northern Interchange Improvements, Onramps, Dinsmore Drive	Reconfigure interchange to include roundabout and bike/pedestrian facilities
Fortuna	U.S. 101/Riverwalk Drive Southern Interchange Improvements	Reconfigure interchange to include roundabout and bike/pedestrian facilities mand.
Fortuna	U.S. 101/Kenmar Road Interchange Improvements	Reconfigure interchange to add two roundabouts and bike/pedestrian facilities
Fortuna	South Fortuna Boulevard/Ross Hill Road/Kenmar Road	Pedestrian improvements including adding sidewalk, bike lane and retaining wall
Fortuna	Thelma and Ross Hill Road	Install roundabout
Fortuna	Newburg Road, Lawndale Drive, Summer Street, 2nd Ave, Orchard Lane	New sidewalk, bike lanes and school entry improvements
Fortuna	Various Locations – Riverwalk Drive, Fortuna Boulevard, Rohnerville Road	Strongs Creek Trail Phase 1 – Class I bike lane through Fortuna and Class II bike lanes on City streets
Caltrans	101 – In Eureka from Elk River Bridge to Pierson/Tetrault signal	Eureka South Entry Gateway Project

Table *Projects*-2 **New Regional Commuter Trail Projects Proposed in the HCAOG RTP 2017 Update**

Jurisdiction	Trail Project	Project Description
Eureka	Eureka Loop Trail	Multipurpose trail connecting the north and south ends of the Eureka Waterfront Trail to key destinations in Greater Eureka Area.

Table *Projects*-3 **New Regional Projects for Public Transportation Proposed in the HCAOG RTP 2017 Update**

Operator/Agency	Location	Project Description
HTA	HTA Maintenance Yard, Eureka	Bus parking restructuring
HTA	HTA Maintenance Yard, Eureka	Additional maintenance bays
HTA	HTA Maintenance Yard, Eureka	Solar photovoltaic system
K-T Net	Increased frequency	

Table *Projects*-4 **New Regional Aviation Projects Proposed in the HCAOG RTP 2017 Update**

Lead Agency	Airport	Project Description
County of Humboldt	Redwood Coast Airport	Air Freight Needs Assessment (to study Redwood Coast, Murray Field, and Rohnerville Airports)
County of Humboldt	Redwood Coast Airport	Obstruction Mitigation Plan
County of Humboldt	Redwood Coast Airport	Obstruction Removal
County of Humboldt	Redwood Coast Airport	Pavement Maintenance Management Plan
County of Humboldt	Redwood Coast Airport	Phase 4 ARFF – Construct ARFF Building

Lead Agency	Airport	Project Description
County of Humboldt	Redwood Coast Airport	Taxiways B&G Drainage Improvements
Hoopa Valley Tribe	Hoopa Airport	Taxiway extension to runway
County of Humboldt	Murray Field Airport	Air Freight Needs Assessment—*see under Redwood Coast Airport*
County of Humboldt	Rohnerville Airport	Air Freight Needs Assessment—*see under Redwood Coast Airport*
SCRID No. 1	Shelter Cove Airport	Airport Land Use Plan Update
SCRID No. 1	Shelter Cove Airport	Improve drainage – southeast tiedown area
SCRID No. 1	Shelter Cove Airport	Pilots' lounge
SCRID No. 1	Shelter Cove Airport	Slurry seal taxiway/miscellaneous pavement
SCRID No. 1	Shelter Cove Airport	Taxiway realignment
SCRID No. 1	Shelter Cove Airport	Taxiway realignment planning
SCRID No. 1	Shelter Cove Airport	Tiedown area paving, southeast and northwest tiedown
City of Eureka	Samoa Field (formerly Eureka Municipal)	Remove/prune willow stand
City of Eureka	Samoa Field (formerly Eureka Municipal)	Construct security fencing

IMPACTS ASSESSMENT

As summarized above, the update to the RTP consists of some new policies, updated Action Plans, and a new Global Climate Crisis element. The Action Plans consist of project lists provided by each HCAOG member entity and Technical Advisory Committee members. The project lists are similar to those in the 2014 RTP and, in fact, project lists for some jurisdictions did not change at all. The proposed projects and funding cover the same transportation modes as in the previous RTP. No new major projects are proposed in the revised Action Plans in the RTP 2017 update.

The Addendum to the FEIR assesses potential impacts based on the incremental change due to the new policies and projects proposed in the 2017 update compared to the policies and projects proposed in the 2014 RTP that were already analyzed in the FEIR.

For the proposed project, the RTP 2017 update, the existing analysis contained in the environmental checklist of the Initial Study (Appendix A of the FEIR) continues to adequately address the environmental factors for these ten environmental factors: **aesthetics, agricultural resources, cultural resources, hazards and hazardous materials, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems.** As discussed in the Initial Study, the HCAOG Board determined that the RTP posed either no adverse impact, a less-than-significant adverse environmental impact, or a potentially significant environmental impact that was reduced to less-than-significant when the identified mitigation measures were incorporated with implementation.

Because the minor changes in the proposed RTP 2017 update:

1) have not changed the nature or scale of the Regional Transportation Plan; and
2) are not proposed under environmental conditions or circumstances substantially changed from those analyzed and addressed in the FEIR,

no additional analysis or discussion of these topics is required. The determinations for these environmental factors is the same as concluded in the Initial Study Checklist: With the FEIR mitigation and monitoring program incorporated, the proposed RTP 2017 update will have a less-than-significant adverse environmental impact in these ten environmental factors.

The Program EIR analyzes the environmental factors for air quality, biological resources, environmental justice, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, and transportation/circulation, plus growth-inducing impacts and irreversible effects.

Since the FEIR was certified in 2014, and the RTP subsequently adopted, there has been no substantial evidence that substantial changes have occurred to these baseline environmental conditions either on or near the proposed project sites. Some changes, of course, have occurred; for example, the State legislature has passed new related laws, and HCAOG members have adopted new plans. However, because these changes do not directly affect either the program-level environmental analysis and/or do not apply to the local or regional level, the changes are deemed "minor" as they relate to comparing conditions now to conditions discussed in the 2014 FEIR.

Because the nature and scope of the projects proposed in the RTP 2017 update has not changed from the 2014 Update, and because the conditions discussed in the 2014 FEIR have not substantially changed for **environmental justice, geology and soils, hydrology and water quality, noise, or irreversible effects**, no further environmental assessment is required.

Likewise, there is no substantial evidence of substantial changes to **air quality, biological resources, greenhouse gas emission and climate change, or transportation/circulation**, but below we summarize pertinent updates that have occurred in the past four years in order to reflect current developments including changes to local, state, and federal regulations, and changes to environmental data.

AIR QUALITY

Humboldt County is within the North Coast Air Basin and falls under the management of the North Coast Unified Air Quality Management District (NCUAQMD). As stated in the 2014 FEIR, as well as currently on the NCUAQMD website, "NCUAQMD is listed as 'attainment' or 'unclassified' for all the federal and State ambient air quality standards except for the State 24-hour standard for PM10" in Humboldt County only, and "(t)he District has not exceeded (i.e., violated) the federal annual standard for particulate matter during the last five year period" (NCUAQMD 2017) (PM10 is particulate matter with a diameter of 10 micrometers or less.)
Below are current revisions and corrections to the FEIR table.

Table *Air*-1 **Current Federal and State Ambient Air Quality Standards***

Pollutant	Federal Standard*	California Standard*
Ozone	~~0.075~~ 0.070 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.10 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)

	0.14 ppm (24-hr avg)	
Lead	~~1.5µg/m3 (calendar quarter)~~ 0.15 µg/m³ (rolling 3-month avg)	~~0.15 µg/m3 (3 month avg)~~ 1.5 µg/m³ (30-day avg)
Particulate Matter (PM_{10})	150 µg/m³ (24-hr avg)	50 µg/m³ (24-hr avg) 20 µg/m³ (annual avg)
Particulate Matter ($PM_{2.5}$)	35 µg/m3 (24-hr avg) 12 µg/m³ (annual avg)	12 µg/m³ (annual avg)

**Strike-outs and underlined text show updates to the original table (2014 FEIR).*
ppm= parts per million, $\mu g/m^3$ = micrograms per cubic meter
Source: California Air Resources Board (5/4/16), www.arb.ca.gov/research/aaqs/aaqs2.pdf, Sept. 12, 2017.

The minor changes in the proposed RTP 2017 update:

1) have not changed the nature or scale of the Regional Transportation Plan; and
2) are not proposed under environmental conditions or circumstances substantially changed from those analyzed and addressed in the FEIR;

therefore, no additional analysis or discussion of these topics is required. **The determinations for air quality environmental factors are the same as stated in the FEIR.**

BIOLOGICAL RESOURCES

The FEIR includes lists of federal- and State-listed special status animal and plant species known to occur, or with potential to occur, within Humboldt County (FEIR Table 4.2-2 and 4.2-3). The lists are based on the California Department of Fish and Wildlife's (then Fish and Game) 2003 California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife Service's Information Planning and Conservation System (IPaC) in 2014 (from the Environmental Conservation Online System). Below we summarize updates to listed special status species since 2014, and discuss how new species that were not listed in the FEIR might be impacted, if at all, by the implementation of the proposed RT 2017 update. We have also noted revisions to information in the FEIR tables, which are minor yet pertinent.

- **Birds**
  - White-tailed kites (*Elanus leucurus*) are fully protected under California Fish and Game Code. They are a nesting raptor species, known to nest within Humboldt County, including recent records of nests near Eureka (CDFW 2017a). Suitable habitat is:

    > Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching (County of Humboldt 2017).

    Most (recorded) observations in Humboldt County have been near the coast, concentrated near Humboldt Bay and the Eel and Mad Rivers (ibid).

    The new proposed projects in the RTP 2017 update are not located in riparian woodlands, river bottomlands, wetlands, marshes or other areas of suitable habitat, nor areas where the white-tailed kites' nest have been observed in Humboldt County. Therefore, impacts would be less than significant and no new mitigation is required.

- **Reptiles & Amphibians**
  - The western pond turtle was listed as the scientific name *Emys marmorata*, whereas the CNDDB 2017 lists it under the scientific name *Actinemys marmorata* (CDFW 2017a).
  - The Del Norte salamander (*Plethodon elongatus*) was listed as a CDFW Species of Special Concern (no formal protection other than CEQA consideration) and is not currently listed (State or federal) (ibid).

- **Mammals**
  - The fisher–West Coast DPS was listed as the scientific name *Martes pennant*, whereas the CNDDB 2017 lists *Pekania pennant.*
  - Although not a special-status species, Roosevelt elk (*Cervus canadensis roosevelti*) are identified as a sensitive resource in the Humboldt County General Plan and under County Code (Section 313-20.1). Suitable habitat for Roosevelt elk includes deciduous and conifer forests, riparian areas, and meadows; within Humboldt County they primarily limit their habitat and range to within Redwood National and State Park (from Freshwater Lagoon to the Klamath River) (County of Humboldt, 2017). Because most of the Roosevelt elk's range is outside of project areas proposed in the RTP 2017 update, impacts would be less than significant and mitigation is not required.

- **Plants**
  - Two plant species that the FEIR did not list but the *Humboldt County General Plan Update's Revised Draft EIR* identified as likely to occur in Humboldt County are: the McDonald's rockcress (*Arabis mcdonaldiana*) which has federal and state protection as an endangered species; and water howellia (*Howellia aquatilis*), which has federal protected status as a threatened species (CDFW 2017b).

  - Table *Bio*-1 shows plant species of special concern. They are not formally listed at the State or federal level (i.e. not legally protected under the national Endangered Species Act (ESA) or California ESA), but are legally protected to be considered under CEQA.

Table *Bio*-1. **California Rare Plant Species Known or with Potential to Occur in Humboldt County**

Scientific Name	Common Name	Rare Plant Rank[1]
Anisocarpus scabridus	scabrid alpine tarplant	3
Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	3
Buxbaumia viridis	buxbaumia moss	2
Calycadenia micrantha	small-flowered calycadenia	2
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover (Note: in the FEIR listed as johnny-nip)	2
Lasthenia californica ssp. *macrantha*	perennial goldfields	2
Ramalina thrausta	angel's hair lichen	1
Sidalcea oregana spp. eximia	coast checkerbloom	1b
Vaccinium scoparium	little-leaved huckleberry	2

[1] 0.1–Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)

0.2–Moderately threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)
0.3–Not very threatened in California (less than 20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

Sources: County of Humboldt, 2017 (citing CNDDB 2017, CNPS 2017, Calflora 2017).

The FEIR identified the coast sidalcea (*sidalcea oregana spp. eximia*) as a Special Status Plant (1b.2 plant). Its common name is coast checkerbloom and it is rare, threatened, or endangered in California and elsewhere. It is worth noting here that it grows at the Redwood Coast Airport (Arcata-Eureka Airport), being relatively common in the airport's grassy areas that are regularly mowed. Survey maps, from 2009 and 2010 surveys at the airport, are provided from the California Department of Fish and Wildlife (Eureka office) (see Figures *Bio*-1 and *Bio*-2 below). The RTP 2017 update proposes projects that could potentially affect this habitat area, such as constructing runway lighting improvements. The County's Public Works Department, which includes the Aviation Division, is aware of the plant's status and presence, and has in the past coordinated with CDFW and USFWS. The biological resources mitigation measures outlined in the FEIR shall serve to further reduce potential environmental impacts to less than significant.

Photo credits: CDFW-Eureka Office

Coast Checkerbloom (*sidalcea oregana spp. eximia*) at the Arcata-Eureka Airport

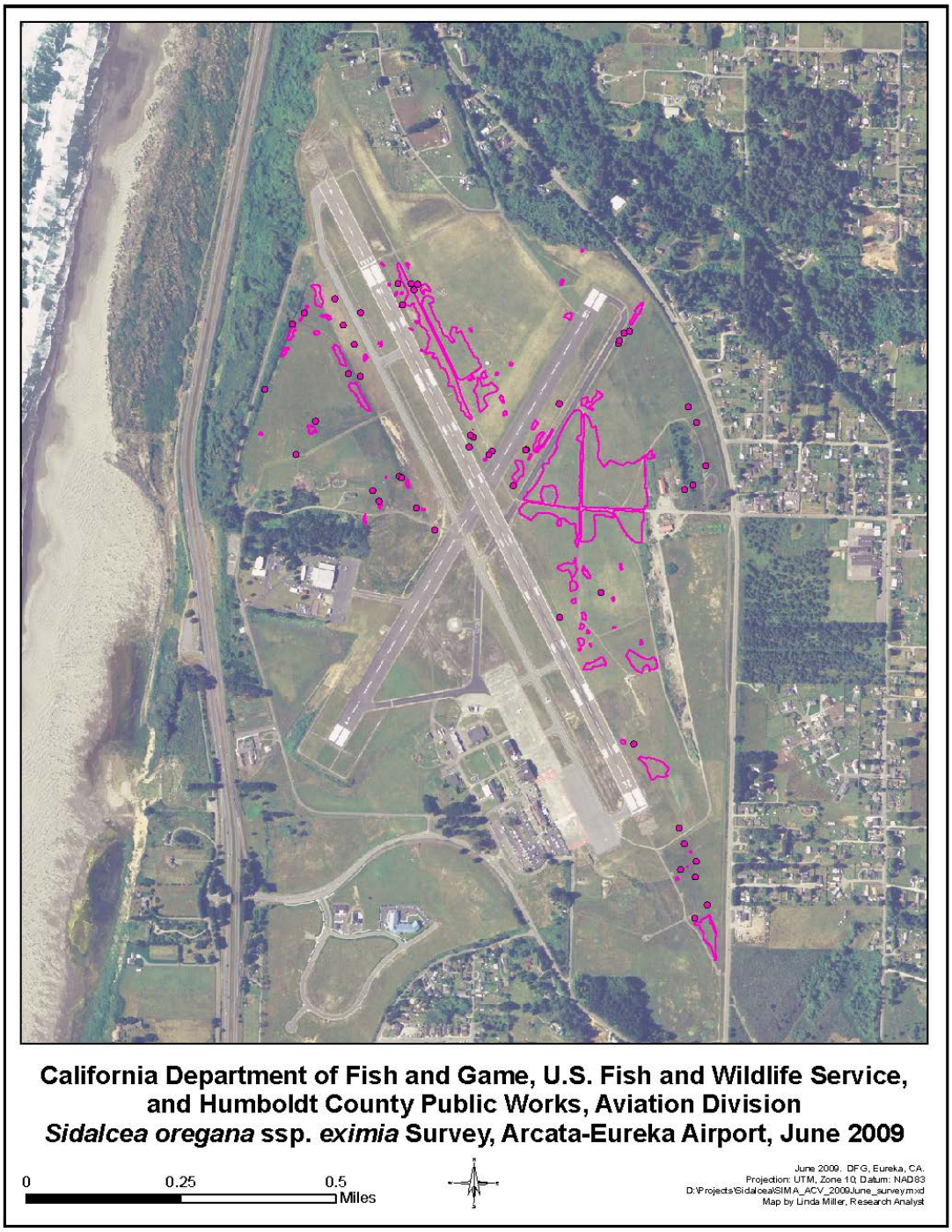

Figure *Bio*-1. **Survey of Coast Checkerbloom (*sidalcea oregana spp. eximia*) at the Arcata-Eureka Airport, 2009**

Figure *Bio*-2. **Survey of Coast Checkerbloom (*sidalcea oregana spp. eximia*) at the Arcata-Eureka Airport, 2010**

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1) have not changed the nature or scale of the Regional Transportation Plan; and
2) are not proposed under environmental conditions or circumstances substantially changed from those analyzed and addressed in the FEIR;

therefore, no additional analysis or discussion of these topics is required. **The determinations for environmental factors for biological resources are the same as stated in the FEIR.**

GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

Governor Jerry Brown, in 2015, established a California target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 (Executive Order B-30-15, April 29, 2015). Then, in September 2016, Governor Brown signed Senate Bill 32 (Pavley) and Assembly Bill 197 (Garcia), which codified the 2030 target. The target is a mid-target for the State reaching the ultimate goal of the California Global Warming Solutions Act of 2006 (AB 32), which is to reduce emissions to 80 percent below 1990 levels by 2050.

To comply with California's climate bills, State agencies must take climate change into account for planning and investment decisions. Foremost among State agencies, the Air Resources Board (CARB) must develop strategies to reduce GHG emissions, which they did most recently in the draft *2017 Climate Change Scoping Plan Update—The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target* (CARB January 20, 2017; not yet finalized/adopted). As reiterated in the *2017 RTP Guidelines for RTPAs*, State agencies should use the following principals as guidance:

- Give priority to actions that both build climate preparedness and reduce GHG emissions;
- Where possible, take flexible and adaptive approaches to prepare for uncertain climate impacts;
- Actions should protect the state's most vulnerable populations; and,
- Prioritize natural infrastructure solutions (e.g., flood plain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planning to reduce high heat days) (as defined in Public resources code 71154(c)(3)).

State agencies must also employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives.

The "California Greenhouse Gas Inventory 2000-2015," 2017 edition, offers updated data from what was available in 2014. In it, the California Air Resources Board (CARB) reports:

- In 2015, statewide emissions of CO_2 from routine emitting activities declined 1.5 million metric tons of CO2 equivalent (MMTCO2e) from 2014 levels; statewide emissions have decreased overall by 10% since peak levels in 2004.
- The transportation sector remains the largest source of GHG emissions in the state, accounting for 37% of the inventory, and had an increase in emissions in 2015.
- Emissions from transportation sources were relatively constant through 2007, declined through 2013, then increased by 4.6 MMTCO2e (or 3%) from 2014 to 2015.
- Emissions from the electric power sector comprise 19% of 2015 statewide GHG emissions (5.2% decline in 2015 compared to 2014). Emissions from the electricity sector continue to decline due to growing zero-GHG energy generation sources.
- Emissions from the remaining sectors have remained relatively constant. (CARB 2017)

The Intergovernmental Panel on Climate Change's (IPCC's) *Fifth Assessment Report* includes projected changes in the global climate system according to different levels of future GHG emissions. Although the range of temperature changes have not substantially changed from what is reported in the 2014 FEIR (based on a 2007 IPCC report), the minimum increases under most scenarios appears to have increased:

> The increase of global mean surface temperature by the end of the 21st century (2081–2100) relative to 1986–2005 is likely to be 0.3°C to 1.7°C under a stringent mitigation scenario; 1.1°C to 2.6°C or 1.4°C to 3.1°C under two respective intermediate scenarios; and 2.6°C to 4.8°C under very high GHG emissions. The Arctic region will continue to warm more rapidly than the global mean ("Climate Change 2014 Synthesis Report Summary for Policymakers," IPCC 2014).

Other summary points from the *IPCC Fifth Assessment Report* are:

- The evidence for human influence on the climate system has grown since the IPCC Fourth Assessment Report.
- Over the period 1901 to 2010, global mean sea level rose by 0.19 [0.17 to 0.21] m. The rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia (high confidence).
- Total anthropogenic GHG emissions have continued to increase over 1970 to 2010 with larger absolute increases between 2000 and 2010, despite a growing number of climate change mitigation policies.
- Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010 (high confidence) (ibid).

As noted in the 2014 FEIR, the City of Arcata has an adopted "Community Greenhouse Gas Reduction Plan" (August 2006), and the County of Humboldt has a "Climate Action Plan," (January 2012). Other recent local planning includes:

- The Blue Lake Rancheria has set the goal to reach full energy self-sufficiency and reduce greenhouse gas emissions to zero. Since 2002, the Tribe has cut energy consumption by 35 percent, with associated drops in emissions. The Tribe has set a target to reduce GHG emissions by another 40 percent by 2018.
- The City of Blue Lake adopted a "Climate Action Plan" in August, 2014.
- The City of Eureka has developed a "Sea Level Rise Adaptation Planning Report" (December 2016)
- The City of Trinidad, in addition to its Climate Action Plan (2010), developed the "2016 Climate Change Vulnerability Report and Adaptation Response" (April 2016) as part of its Local Coastal Program Update Project (in process).
- Humboldt State University (Office of Sustainability) developed a *Climate Action Plan*, issued on December 12, 2016.

And in HCAOG's RTP, the 2017 update included a new "Global Climate Crisis Element," which adds new focused policies to promote and support strategies to reduce transportation-related GHG emissions. The policies are:

> Policy C-1. Put forth strategies that shift travel to be more transit-focused and rideshare-oriented, to achieve more road safety benefits. *(CTP 2040 recommended policy)*

> Policy C-2. Promote active transportation, ridesharing, rail, and public/mass transit promoting policies for the co-benefit of reducing air pollution when they replace motor vehicle trips. *(CTP 2040 recommended policy)*
>
> Policy C-3. 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, and Local Coastal Programs. *(CTP 2040 recommended policy)*
>
> Policy C-4. HCAOG will support and plan transportation and projects that provide safe and convenient travel modes for people who cannot or choose not to drive.
>
> Policy C-5. HCAOG will promote and support land use policies that accommodate or reinforce planning, designing, and building a truly multimodal transportation network.
>
> Policy C-6. HCAOG shall encourage partnerships to develop adaptation strategies that address sea-level rise in Humboldt County.

The FEIR discusses that the 2014 RTP would reduce per capita GHG emissions from 2013 by 14 percent, and that the full set of projects and policies are designed to align transportation planning to reduce VMT and transportation-related GHG emissions.

The changes in the proposed RTP 2017 update:

1) have not changed the nature or scale of the Regional Transportation Plan; and
2) are not proposed under environmental conditions or circumstances substantially changed from those analyzed and addressed in the FEIR;

therefore, no additional analysis or discussion of these topics is required. **The determinations for GHG emissions/climate change environmental factors are the same as stated in the FEIR.**

TRANSPORTATION & CIRCULATION

The criteria for analyzing transportation impacts, as it relates to complying with CEQA, is going through major shifts on account of the passage, in September 2013, of Senate Bill 743 (Steinberg). Senate Bill 743 mandates that a proposed project's impact on auto delay, level of service (LOS), or similar measures of vehicular capacity or traffic congestion, cannot be a basis for determining a significant adverse impact (nor can parking capacity be a basis for adverse impacts within infill areas where frequent transit service is provided nearby). In 2016, the Governor's Office of Planning and Research released a proposal of revised CEQA Guidelines, in which they state,

> Legislative findings in that bill plainly state that California's foundational environmental law can no longer treat vibrant communities, transit and active transportation options as adverse environmental outcomes. On the contrary, aspects of project location and design that influence travel choices, and thereby improve or degrade our air quality, safety, and health, must be considered (OPR 2016).

OPR recommends that vehicle miles traveled (VMT) per capita and VMT per employee be used as the new metrics for analyzing transportation impacts under CEQA. OPR also acknowledges that:

- some variation in *thresholds* may be appropriate in different parts of regions and the state; for example, (i) outside of central urban locations it may be appropriate to refer to a city's

average, or (ii) within unincorporated county areas it may be appropriate to reference the average of the cities in the county. (CEQA Guidelines § 15064(b))

- VMT data is not available at the same level in all areas of the State, but that statewide data on VMT are available statewide. "For example, the California Statewide Travel Demand Model provides data on vehicle miles traveled throughout the state which can be used both for setting thresholds and for estimating VMT resulting from a proposed project" (ibid). The adequacy of any analysis "is to be reviewed in the light of what is reasonably feasible" (CEQA Guidelines § 15151).

The proposed changes must be finalized by the Natural Resources Agency, through the "rulemaking" process, before they go into effect—which is generally expected to occur in 2018. OPR has recommended that the new procedures remain optional for two years after formal rulemaking, to give agencies who want it "more time to become acquainted with the new procedures" (ibid).

Because the proscribed CEQA criteria per SB 743 is not yet in effect, for the time being agencies can use LOS as a threshold to determine transportation impacts and still be in compliance with CEQA. Nonetheless, in the 2014 FEIR, HCAOG veered away from LOS and used VMT, per capita VMT, and vehicle hours travelled (VHT) as the performance indicators to determine potential impacts to the overall regional transportation system. This was consistent with the performance indicators established by the RTP 2013/14 Update, which have remained the same in the proposed RTP 2017 update.

Additionally, the FEIR used the criteria for determining transportation and circulation impacts based in part on the CEQA Guidelines environmental checklist. It also used performance measures established by HCAOG, which added the following thresholds for significant impacts:

- A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

The RTP 2017 update includes new proposed projects, as well as deletes some projects because they have been accomplished (mostly in the Complete Streets Element). The new proposed projects do not change the overall scope or nature of projects as adopted in the 2013/14 RTP (See Tables *Projects*-1 through 4 for all new proposed projects). None conflict with applicable adopted transportation plans; none are related to air traffic patterns; projects listed in the Complete Streets Element aim to design and deliver projects that will decrease hazards; none propose design concepts that would hinder existing emergency access; and transit projects consist of capital projects (e.g. purchasing new fleet inventory) and new transit service.

The changes in the proposed RTP 2017 update:

1) have not changed the nature or scale of the Regional Transportation Plan; and
2) are not proposed under environmental conditions or circumstances substantially changed from those analyzed and addressed in the FEIR;

therefore, no additional analysis or discussion of these topics is required. **The determinations for environmental factors for transportation and circulation are the same as stated in the FEIR.**

LONG-TERM EFFECTS

An EIR must address a proposed project/plan's potential irreversible effects and growth-inducing impacts. Irreversible effects (*CEQA Guidelines* Section 15126(e)) mean irreversible environmental changes such as consuming expend or demolishing significant resources, particularly nonrenewable natural resources and irreplaceable cultural or historical resources. Significantly altering a natural resource through development, urbanization, and the like is also considered an irreversible impact under CEQA. Growth-inducing impacts (*CEQA Guidelines* Section 15126(g)) mean a proposed project's potential to foster economic or population growth, including by removing an existing obstacle(s) to growth.

The RTP 2017 Update proposes the same type of transportation projects that were proposed previously. To implement projects, jurisdictions/agencies would draw upon the same type of environmental and economic resources for construction, operations, and transportation services. The projects would be implemented within the same geographic areas, and in the same and similar settings within the built environment (e.g., developed areas, existing transportation corridors, and existing service areas). No new projects are proposed that would expand transportation access into undeveloped areas. The RTP 2017 Update would not result in new significant environmental impacts not previously evaluated in the FEIR.

The changes in the proposed RTP 2017 update:

1) have not changed the nature or scale of the Regional Transportation Plan; and
2) are not proposed under environmental conditions or circumstances substantially changed from those analyzed and addressed in the FEIR;

therefore, no additional analysis or discussion of these topics is required. **The determinations for potential irreversible effects and growth-inducing impacts are the same as stated in the FEIR.**

CONCLUSION

Based on the above, no new significant adverse environmental impact nor a substantial increase in previously identified significant impacts would occur as a result of the proposed RTP Update. Therefore, the impacts introduced as a result of the RTP do not meet the standards for a subsequent or supplemental EIR pursuant to CEQA Guidelines Section 15162.

The significance determinations reported in the CEQA Checklist section of the Initial Study have not changed for the applicable topics. Likewise, the significance determinations and the Mitigation and Monitoring Program identified in the Final EIR have not changed.

REFERENCES

CITATIONS

AEP 2017 (Association of Environmental Professionals) "AEP 2017 Advanced CEQA Workshop" booklet.

CARB 2017 (California Air Resources Board) "California Greenhouse Gas Inventory 2000-2015," 2017 edition. (Version June 6, 2017). (ww.arb.ca.gov/cc/inventory/pubs/reports/2000_2015/ ghg_inventory_trends_00-15.pdf, accessed September 12, 2017.

CDFW 2017a (California Department of Fish and Wildlife) California Natural Diversity Database (CNDDB), "Special Animals List" (July 2017).

CDFW 2017b California Natural Diversity Database (CNDDB) "State and Federally Listed Endangered, Threatened, and Rare Plants of California–Last updated July 2017."

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

County of Humboldt 2017 *Amendments to Humboldt County Code Regulating Commercial Cannabis Activities Project Draft EIR* (State Clearinghouse Number 2017042022). Prepared for the County of Humboldt by Ascent Environmental (September 2017).

NCUAQMD 2017 "Air Quality Planning & CEQA" webpage. www.ncuaqmd.org/index.php?page=aqplanning.ceqa#T1, accessed September 12, 2017.

OPR 2016 (Governor's Office of Planning and Research) *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA: Implementing Senate Bill 743 (Steinberg, 2013).* (January 20, 2016)

U.S. FWS 2017 (Fish and Wildlife Service) ECOS Environmental Conservation Online System, Listed Animals. https://ecos.fws.gov/ecp/, accessed September 15, 2017.

RESOURCES

Coyote Campus Project Addendum to FEIR: Gavilan Joint Community College District 1. January 2015

APPENDIX C

Public & Agency Comment Letters

From: **Emily Sinkhorn, Redwood Community Action Agency**
Date: May 17, 2017
Public Transit section of the RTP

- I thought perhaps it could be mentioned that the Unmet Transit Needs process two years ago determined that service along Old Arcata Road as a reasonable to meet need. I did not see this discussion in this section. Could there also be a discussion of what ADA and other improvements would need to happen to make new transit stops along this proposed route feasible?

From: **Sungnome Madrone, Mattole Salmon Group**
Date: Sat, Aug 5, 2017 at 9:42 PM
Subject: Input on the Complete Streets, Commuter Trails...Plan

Here is my written input on the plan.

- On page 3 of **the Staff Report** at the bottom it should say...the Grand Vision is to have a multi use trail for non-motorized travel from Trinidad and Blue lake to... As one of the originators of that vision it has always included all the way to Trinidad.
- Also at the bottom of page 6 Trinidad should once again be listed as part of the connected vision.
- On page 8 under Little River Trail all of the Little River Trails studies should listed here. I realize this is just a staff report but it would be nice if any future reports and communications would have these more accurate changes made.

On Page 14 of Section 2. Complete Streets Element it says the "TAC prioritized all projects based on the RTP's main objectives". Yet of the over 200 projects listed only 4 do not have any prioritization's cores. I was told at the public meeting that it was because no entity was taking responsibility for the project so no scoring was done, yet the statement above says all projects were scored. **Scoring this project** would make it a short term priority I would guess. Please prioritize it according to its attributes and then the issue of who is responsible is another matter. Fair is fair.

In fact an argument can be made for this project being a higher priority than the Bay trail for many reasons.
#1 the public owns all of the right of way for construction
#2 there is no Railroad to deal with
#3 this is the biggest bottle neck of transportation on the coast with HWY 101 as the only option and pedestrians are completely stopped.

With the county's bay trail project making contract amendment requests for more time to spend the money they have been allocated this point becomes clear. as the bay trail is dealing with #1 and #2 above as well as severe bay (rail and trail berm areas) erosion from rising seal level and subsidence.

Please do not mis-understand me. I support all of these trail and want to see the bay train completed as much as any one. In fact I was one of the original visionaries of this effort in the 1980's and beyond.

The only thing holding up the Little River Trail is Cal Trans illegal refusal to take on the responsibility for mitigating for the loss of non-motorized transportation over Little River when they built the bridges. That does not change its priority according to the RTP Main Objectives.

Sungnome Madrone
Executive Director, Mattole Salmon Group
www.mattolesalmon.org

CRTP
Coalition for Responsible Transportation Priorities

October 6, 2017

Marcella Clem, Executive Director
Supervisor Ryan Sundberg, Chair of the Board of Directors
Humboldt County Association of Governments
611 I Street, Suite B
Eureka, CA 95501
via email: marcella.clem@hcaog.net; rsundberg@co.humboldt.ca.us

RE: Draft 2017 Regional Transportation Plan Update

Ms. Clem and Chair Sundberg:

Thank you for the opportunity to provide input on the proposed 2017 Regional Transportation Plan (RTP) Update for Humboldt County. Our comments are as follows.

Climate Change & Greenhouse Gasses

The increased emphasis on the global climate crisis in the RTP Update is necessary and appropriate. However, there are some areas of the document where treatment of climate issues should be strengthened. For example, performance measures for aviation and goods movement both establish standards based on greenhouse gas (GHG) emissions per capita. However, recognition of the seriousness of the climate crisis calls for standards based on overall GHG emissions, so that emissions do not increase even if and when population grows. As the RTP's own summary of the CARB Scoping Plan notes, while per capita targets may be used, "the 'correct overall objective' is no-net increase or net zero emissions threshold" (p.10-179).

Additionally, policies and objectives such as PT-11 and GM-9 which establish goals of increased use of "alternative fuels" must define this term by specifying either specific fuels or GHG emissions standards in order to ensure that the policy does not encourage use of new or established fuels with significant GHG footprints. Finally, Policy CS-11 must be updated to include reference not only to AB 32, but also to SB 32 and other legislation described in the RTP's new Global Climate Crisis chapter.

Below, in addition to other topics, we address some other portions of the draft RTP Update which must be modified in order to avoid inconsistency with the RTP's own climate-related goals, objectives and policies. We note that RTP internal consistency is required by the 2017 Regional Transportation Plan Guidelines for Regional Transportation Planning Agencies.

Mode Share & VMT

The bulk of specific projects and actions identified in the RTP Update are contained in the "Complete Streets Element." We have serious concerns about the ability of the "complete streets"

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concept to adequately address the health, safety and environmental challenges we face today, as we noted in our recent comments on HCAOG's draft 2017 Regional Bike Plan:

> Accommodating all road users equally sounds good in theory, and the idea is very popular and indeed ingrained in many current state and federal policies. However, the fact is that vehicles are the main safety threat to bicyclists (and pedestrians), and reducing vehicular travel is the only way to ensure true safety for everyone else. Reducing vehicular travel is also key to meeting many other environmental and societal goals, a fact implicitly recognized by the inclusion of mode shift (increasing the proportion of trips by bicycle, and thus decreasing the vehicular proportion) as an objective of the plan per se. Reducing vehicular travel, however, will likely require making it more inconvenient—by making it slower, providing less parking, etc. In this context, "Complete Streets" policies often function more as a way to justify the continued dominance of automobiles by providing minimum accommodation for other travel modes, rather than progress toward true mode shift.
>
> We encourage HCAOG to prioritize the development of Class I bikeways and other infrastructure which is actually designed for bicyclists and pedestrians, rather than making them an afterthought on roads designed for vehicles. We also encourage HCAOG to consider innovative new solutions to incentivize more convenient and safe active transportation and disincentivize vehicle use. For example, banning vehicles entirely from some roads (which, it must be admitted, our local jurisdictions struggle to maintain in adequate driving shape anyway) and dedicating them to bicycles and pedestrians instead should be considered.

Mode shift and reduced VMT are explicit priorities of the RTP Update as well, appearing in Policies such as CS-11, C-1, and C-2. Yet these policies conflict with other goals, objectives and policies which call for equal accommodation of all modes of travel, a situation which would surely result in continued dominance of the single-user automobile. Furthermore, some policies and performance measures in the RTP Update (particularly in the Goods Movement Element) call for reducing road congestion. However, reduced congestion and increased travel speed is the cause of induced travel demand,[1] so fulfilling these goals would result in increase vehicular mode share and VMT, in conflict with climate-related goals and policies.

It also must be noted that the RTP Update's introduction contains the problematic assertion that no significant mode shift will occur, claiming that "the private automobile will remain the primary mode of transportation" (p.1-8). This fatalistic assumption is at odds with many of the goals, policies and objectives of the RTP itself, including those related to the climate crisis.

We strongly urge HCAOG to re-interpret and re-state its "complete streets" and related assumptions, goals, objectives, and policies in such a way as to clarify that increasing mode share for modes such as walking, bicycling, and mass transit is a top priority, while increasing convenience and speed of travel for vehicles are *not* goals of HCAOG or the RTP.

We also note that many of the "top priority" complete streets projects listed in Table *Streets*-4 appear to have nothing to do with the "complete streets" concept, let alone with encouraging mode shift. Rather, many of them involve simply building new roadways or improving roadways for vehicular use. We were particularly disturbed to see the Richardson Grove Operational

[1] Cervero, Robert. 2003. Road Expansion, Urban Growth, and Induced Travel: A Path Analysis. Journal of the American Planning Association 69(2): 145-163.

Improvement Project in this Table, as this project is explicitly designed only to allow the largest trucks to use the roadway and includes no improvements for pedestrians, bicyclists or other users. By inducing additional truck traffic,[2] the Richardson Grove project runs counter to goals, objectives and policies of the RTP pertaining to climate, environment, mode share, and infrastructure maintenance, and should not be included in the RTP at all. Certainly HCAOG must not "greenwash" the RTP by identifying all road projects as "complete streets" projects.

Finally, the RTP is overly focused on the roadway system at the expense of other types of transportation infrastructure. The clearest illustration of this problem comes from a comparison of Tables *Streets*-4 and *Trails*-1. Not only is the list of trail projects much shorter than the list of road projects, but *Trails*-1 lacks any of the information about funding sources or years of construction contained in *Streets*-4. Funding and timeline information must be included to demonstrate HCAOG's commitment to the regional trail system.

Goods Movement & Economic Analysis

The Goods Movement Element recognizes "Humboldt's small population and economic base" as well as its "rugged terrain and remoteness...[which] make it more expensive to transport goods in and out" (p.7-125). However, the document also makes "maximiz[ing] use of transportation corridors" a specific objective (p.7-122) and includes increased port areas, greater numbers of airplane trips, and greater numbers of highway miles as performance measures (p.7-137).

The small population, rugged terrain and remoteness identified by the RTP itself make the idea of maximizing freight traffic both economically unsound and environmentally infeasible in a carbon-constrained world. It is also inconsistent with climate-related goals, objectives and policies of the RTP. Instead, objectives, policies and performance measures should be focused on actually achieving the RTP's well-stated goal of moving goods "efficiently and cost-effectively" in and out of the County "in a manner that is economically sustainable and environmentally compatible" (p.7-121). In other words, the RTP should be focused on meeting local needs for goods movement in a responsible manner, not maximizing goods movement for its own sake.

The RTP Update also requires some corrections regarding truck routes. First, inclusion of "STAA compliance" in a list of economic attractors under the RTP's "economic vitality" objective is misleading at best. The county's roadways are fully compliant with the STAA already. STAA trucks are required to be allowed on the "National Network," which is the name generally applied to a designated set of large interstate highways (49 CFR §3111(b), California Vehicle Code Section 34501.5(a)). STAA trucks must also be allowed "reasonable access" to facilities and services via roads within 1 mile of the National Network, and on designated Terminal Access routes between the National Network and freight terminals or facilities (23 CFR §658.19, California Vehicle Code Section 34501.5(c)-(d)). The denial of a request for a TA designation may legally be made "only on the basis of safety and an engineering analysis of the access route" (23 CFR §658.19(i), California Vehicle Code Section 34501.5(d)). "Safety and an engineering analysis" are exactly the reasons that

[2] Coalition for Responsible Transportation Priorities. July 2017. Truck Traffic Impacts: "Richardson Grove Operational Improvement Project" and "197/199 Safe STAA Access Project". Available at http://transportationpriorities.org/wp-content/uploads/2017/07/Traffic-Study-2017-Final.pdf.

certain stretches of the regional highway network lack TA designation. Thus, STAA compliance is not an issue.

Additionally, the description of "major truck routes" on pages 7-114 and 7-115 contains outdated information about STAA Terminal Access routes generally and about the Richardson Grove Operational Improvement Project specifically. This description should be updated with information about the impending STAA access on SR 299 (mentioned elsewhere on p.7-126) and with current information about the Richardson Grove project's status.

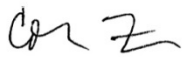
Finally, we encourage HCAOG to include consideration of short sea shipping in the Goods Movement Element. While there are certainly challenges to adoption of regional freight movement via this mode, we note that there are significant challenges to all modes of regional freight movement due to our "rugged terrain and remoteness." Short sea shipping holds promise as a cost-effective, low-emissions mode of freight transportation, and the RTP should consider it.

Public Process

The numerous omissions of figures and notations of text "to be updated" throughout the document are troubling, in that they deny the public the ability to review the RTP Update in its entirety. In the interest of transparency, CEQA documentation should also be made available with the RTP Update for public review—even if it consists solely of an Environmental Impact Report Addendum or other documentation which does not legally require public circulation.

Thank you for your careful consideration of our comments.

Sincerely,



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CRTP
Coalition for Responsible Transportation Priorities

November 1, 2017

Oona Smith, Senior Planner
Humboldt County Association of Governments
611 I Street, Suite B
Eureka, CA 95501

via email: oona.smith@hcaog.net
cc: marcella.clem@hcaog.net; rsundberg@co.humboldt.ca.us

RE: Semi-Final Draft 2017 Regional Transportation Plan Update

Ms. Smith:

Thank you for the your review of our October 6, 2017 comments on the proposed 2017 Regional Transportation Plan (RTP) Update for Humboldt County. Thank you also for inviting us to submit additional comments on topics we would like you to "reconsider or consider anew." This invitation reflects an admirable commitment to public and stakeholder engagement.

The proposed changes reflected in the Semi-Final Draft RTP Update address a number of our previous concerns. However, we do wish to encourage you to reconsider some of those concerns which remain unaddressed, namely:

- For reasons described more fully in our previous comments, we again ask you to address the internal inconsistency between the admirable goal of a "system [that] moves passengers and goods in a manner that is economically sustainable and environmentally compatible" (p.7-9) and the problematic objective to "maximize use of transportation corridors," (p.7-10). Moving more goods simply because our corridors have the theoretical capacity to do so, regardless of local needs and environmental impacts, is neither economically sustainable nor environmentally compatible in our remote region. The established goal is also incompatible with proposed performance measures which go one step further by measuring capacity *expansion* rather than only "maximum use." Such performance measures include increased port areas, greater numbers of airplane trips, and greater numbers of highway miles (p.7-23). We ask that you remove these performance measures from the RTP and modify the proposed goods movement objective as follows:
    - *"Improve goods mobility, reliability, and system efficiency in and out of Humboldt County as necessary to meet local needs. Connect road, sea, air, and rail transport modes to maximize the utility of each mode ~~and maximize use of transportation corridors within the region~~."*
- As we detailed in our previous comments, there is no problem of "STAA compliance" on highways in our region. There is no legal mandate to redesign roads to allow larger trucks, and whether or not to do so is purely a policy question. Therefore, we ask again that you remove the phrase "STAA compliance" from the RTP (specifically at p.1-8).

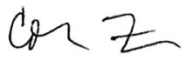
PO Box 2495, McKinleyville, CA 95519 • transportationpriorities.org

- We appreciate the fact that the Richardson Grove Operational Improvement Project no longer appears in the "Complete Streets" element. However, we again ask that the project be removed from the RTP entirely. If you have not done so already, we urge you to review our July 2017 report entitled "Truck Traffic Impacts: 'Richardson Grove Operational Improvement Project' and '197/199 Safe STAA Access Project'", which is available on our website. This report shows that the project—which would redesign a section of highway for larger trucks while providing no accommodation for pedestrians, cyclists or other users—is highly likely to induce additional truck traffic. Therefore, as we noted previously, the project "runs counter to goals, objectives and policies of the RTP pertaining to climate, environment, mode share, and infrastructure maintenance."

We also note one minor erratum: Our name appears as "Coalition for Sustainable Transportation Priorities" on p.1-15 of the document, rather than "Coalition for Responsible Transportation Priorities."

Thank you again for your careful consideration of our comments.

Sincerely,



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STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 1, P. O. BOX 3700
EUREKA, CA 95502-3700
PHONE (707) 441-4693
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Making Conservation a California Way of Life.

November 27, 2017

Oona Smith, Senior Planner
Humboldt County Association of Governments
611 I Street
Eureka, CA 95501

Dear Ms. Oona Smith,

Thank you for giving Caltrans the opportunity to review and comment on the Humboldt County Association of Governments' (HCAOG's) 2017 Update of the Humboldt Regional Transportation Plan: "Variety in Rural Options Of Mobility" (VROOM).

We would like to recognize HCAOG's effort in developing a 2017 Regional Transportation Plan that is easily understandable by the general public. The Draft RTP purpose, goal, and objectives are well-aligned with the California Transportation Plan (CTP 2040) policy framework and other statewide plans. There are also frequent references to the CTP 2040 throughout the document. The plan appeals to the county's strengths and sets ambitious goals. We also appreciate the detail provided relating to the different transit services operating in the county, which is very helpful information.

We also recognize the cooperative relationship with the region's Tribal Governments and evidence of this collaboration is present throughout the entire plan.

General

1. From a perspective of consistency with the Active Transportation Program, we suggest re-organizing information contained in the Humboldt Regional Bike Plan, the Humboldt Regional Trails Plan, and the Humboldt Pedestrian Master Plan into a single Active Transportation Plan, which can become either an integral element of the RTP or an independent plan that is incorporated by reference.
2. The maps provided in the Maps Tab are helpful and informative. While Humboldt County houses less than one-half of one percent of the state's total population, the region offers an expansive service area for public transportation. Public transportation combined with active travel modes provide service throughout the greater parts of Eureka, Arcata, and Fortuna as well as to the more remote portions of the county.
3. Page correction: The Plan purpose begins on 1-6 rather than 1-5.

Consultation/Cooperation

1. The plan states that nearly a quarter of Humboldt County's population will consist of senior citizens by the year 2030. The plan does an excellent job providing a strategy for how to

prepare for changing demographics as well as with the identification of methods for engaging senior citizens. The Public Participation element lists many groups and committees that advocate for the elderly. However, another group that stands to benefit from the transportation plan is the low-income population who may not be able to maintain a private car. It was unclear from the list provided if the low-income population had been involved in the consultation process. Outreach methods that are less time-intensive than participation in an advocacy group may better suit the needs of the low-income population.

2. While the resources inventoried on page 12 of section 1 are practical tools for planning a transportation system, they are not necessarily natural or historic. There is a brief mention of California State Wildlife Action Plan, but no specific species or natural sites are identified.
3. Page correction: The RTP best represents its coordination with the Public Transit-Human Services Transportation plan on page 5-10.

Introduction

1. Page 1-1: Second sentence reads, "A complete transportation network involves operating and maintaining a comprehensive transportation system that upholds safety, activity, equity, sustainability, and resiliency." It is not clear what is meant by the word "activity". Consider replacing with "mobility".
2. Page 1-4 and 1-5: We recommend adding a row for California statewide metrics to each table to provide additional context. Also, we suggest adding text to describe the transportation implications of the demographic tables, especially Table 4.
3. Page 1-8: We recommend adding a sentence that includes a mention of climate change adaptation/resiliency to the "Efficient & Viable Transportation System" objective.

Complete Streets

1. We recommend weaving in photos of complete streets infrastructure in Humboldt County, if possible, to better illustrate concepts.
2. Page 2-4: The description of SR 36 in Humboldt County should be revised to 46 miles in length, rather than the 32 miles as is currently stated.
3. Page 2-4: The description of SR 169 in Humboldt County includes the segment from Klamath to Klamath Glen. This segment is neither 20 miles long, nor is it in Humboldt County. The 20-mile portion of SR 169 within Humboldt County extends from Wautec to Weitchpec, at the junction of SR 96. The segment from Klamath to Klamath Glen is 3.5 miles and entirely within Del Norte County. Between the two segments is an 18.2-mile section where the alignment remains unconstructed.
4. Page 2-6, Table 1: This table should include the new Waterfront Trail from Truesdale Avenue to C St.
5. Page 2-8: Bike and pedestrian connectivity from Broadway (US 101) to the Class I Hikshari Trail could be improved if bike lanes/connections were made at the following locations:
    - Vigo St., from Broadway Ave. to the Waterfront Trail
    - Del Norte St., from Broadway Ave. to the Waterfront Trail
6. While Senate Bill 1 is discussed in detail in Chapter 9, I think that given the magnitude of this legislation it would be appropriate to reference the bill in the introduction. We think that it would also be appropriate to discuss SB 1 on page 2-11 in reference to the roadway maintenance backlog.

7. Additional information, including the number of bridges in Humboldt County, would be helpful to provide, if available.

Modal Discussion
The plan does a good job of explaining how HCAOG intends to create a cohesive multimodal system. Element 7, in particular, had a very articulate plan for goods movement. The discussion in the Aviation Systems element related to the number of Air Taxi services provided is not common practice but has the potential to be a more utilized mode of transport.

Programming/Operations
Page 9-18: "Office of Regional and Interagency Planning (ORIP)" should be "Office of Regional Planning (ORP)."

Financial
The Financial element is well done: consistency statements are included, the funding sources are clear, and federal requirements have been met. The list of fiscally constrained project is simple and complete.

Global Climate Crisis
1. Ridesharing is referenced in Policy C-2 (page 10-4) but not mentioned elsewhere in the draft RTP. Notwithstanding the current absence of transportation network companies (TNCs) or mobility service providers (MSPs) like Uber and Lyft in Humboldt County, we encourage HCAOG to address this increasingly popular mode of transportation. The discussion of rail throughout the document could serve as a model.
2. Page 10-3: Pie charts displaying national GHG breakdowns are low resolution and could be clearer. The reference data is from 2012. We recommend updating this information with higher resolution graphics.
3. Page 10-4, 10-5: "CTP 2040 recommended policy" should be "CTP 2040 recommendation" (five instances).
4. Page 10-8: "CTP 2014" should be "CTP 2040" (two instances).

Please contact me with questions or for further assistance at the number above regarding the above comments.

Sincerely,

Jesse Robertson
Transportation Planning
Caltrans District 1

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"