VROOM…

Variety in Rural Options of Mobility

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HCAOG

20-YEAR

REGIONAL TRANSPORTATION PLAN

2014 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

VROOM...

Variety in Rural Options of Mobility

20-YEAR
REGIONAL TRANSPORTATION PLAN
2014 UPDATE

Adopted August, 2014

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HCAOG
Humboldt County Association of Governments

RESOLUTION 14-12

A RESOLUTION OF THE HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS TO ADOPT THE REGIONAL TRANSPORTATION PLAN–2014 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 an 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 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 five years; and

WHEREAS, HCAOG has developed the *Humboldt Regional Transportation Plan 2014 Update–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, and emergency transportation; 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 , as required by the California Environmental Quality Act Section 21081, HCAOG does make and incorporate by this reference the attached finding in Resolution 14-12 certifying the "Humboldt Regional Transportation Plan 2013/14 Update: Final Environmental Impact Report."

NOW, THEREFORE, BE IT RESOLVED, that the Humboldt County Association of Governments does hereby adopt the *Humboldt Regional Transportation Plan 2014 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 August 2014, by the following vote:

AYES: MEMBERS: Ornelas Strehl Jäger Schapiro, Mierzwa, West, Johnson, Sundberg
NOES: MEMBERS: None

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HCAOG
Humboldt County Association of Governments

ABSENT: MEMBERS: None
ABSTAIN: MEMBERS: None

ATTEST: Diana J. Watts
HCAOG Executive Assistant

Susan Ornelas
Susan Ornelas, HCAOG Chair

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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).
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
ATP	Active Transportation Program (A proposed state program.)
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
CFR	Code of Federal Regulations
CO_2	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
FTA	Federal Transit Administration (under the U.S. Department of Transportation)
FTS	Fortuna Transit System
FY	Fiscal year
NCCTC	North Coast Tribal Transportation Commission
HCAOG	Humboldt County Association of Governments
HSU	Humboldt State University
HTA	Humboldt Transit Authority
HTF	Highway Trust Fund
HVTC	Hoopa Valley Tribal Council
ITS	Intelligent Transportation System
K/T NeT	Klamath Trinity Non-emergency Transportation
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.)
MOU	Memorandum of Understanding
NCRA	North Coast Railroad Authority
NOx	Nitrous Oxide (an air pollutant)

OES	State Office of Emergency Services
OWP	Overall Work Program
PAC	Policy Advisory Committee (HCAOG committee)
PCI	Pavement Condition Index
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)
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 375	Senate Bill 375: Sustainable Communities and Climate Protection Act of 2008
SCC	Service Coordination Committee (HCAOG committee)
SHA	State Highway Account
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
TDA	Transportation Development Act
TE	Transportation Enhancement (Federal, enacted by SAFETEA-LU)
TIGER	Transportation Investment Generating Economic Recovery
TTIP	Tribal Transportation Improvement Program
TSM	Transportation Systems Management
TTPA	Tribal Transportation Programmatic Agreement
VOC	Volatile organic compound (an air pollutant)

1. INTRODUCTION

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 Figure 1.1 for a map of the vicinity.)

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

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 400 residents to Eureka's 26,000 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.

COUNTY DEMOGRAPHICS

Humboldt County's total population (134,317) is 0.35% of the statewide population (37,325,068). The following population characteristics give snapshots of other aspects of Humboldt County's rural makeup.

Table *Intro-1.* Population by Age in Humboldt County

Location	Total Population	Persons 18 yrs. and over	Persons under 18 yrs.	Persons 65 yrs. and older
Humboldt County (All)	134,317	107,423	26,894	17,870
Incorporated Areas				
City of Arcata	20,108	17,068	3,040	1,654
City of Blue Lake	1,768	1,377	391	188
City of Eureka (95501)	23,800	19,312	4,488	3,098
City of Eureka (95503)	24,717	19,635	5,082	3,908

Table continues on next page.

Location	Total Population	Persons 18 yrs. and over	Persons under 18 yrs.	Persons 65 yrs. and older
City of Ferndale	3,065	2,434	631	571
City of Fortuna	13,159	10,049	3,110	2,428
City of Rio Dell	3,388	2,676	712	370
City of Trinidad	2,103	1,794	309	468

Source: US Census Bureau, 2008-2012 American Community Survey 5-Year Estimates

In 2010, 15% of Humboldt County's population was 65 years or older. Between 2010 and 2030, that number is projected to double; by 2040, it is estimated that approximately 32% of the county will be senior citizens. (California Dept. of Finance, July 2007).

Table *Intro-2.* Race and Ethnicity in Humboldt County

Location	Hispanic %	White %	Black %	American Indian %	Asian %	Pacific Islander %	Other %	Two or more %
Humboldt County (All)	9.8	77.3	1.2	5.5	2.5	0.3	0.1	3.3
Incorporated Areas								
City of Arcata	13.0	75.6	1.9	4.2	2.3	0.0	0.2	2.8
City of Blue Lake	5.3	80.0	2.8	7.3	1.7	0.3	0.0	2.5
City of Eureka	9.7	75.5	2.1	3.3	4.9	0.7	0.1	3.7
City of Ferndale	3.7	89.9	0.0	2.0	0.2	0.0	0.0	4.2
City of Fortuna	12.6	77.6	0.6	1.3	3.9	0.5	0.0	3.4
City of Rio Dell	13.8	73.8	1.5	4.7	1.6	0.1	0.3	4.1
City of Trinidad	2.5	93.6	0.0	1.1	0.4	0.0	0.0	2.5

Source: US Census 2008-2012 American Community Survey

Table *Intro-3.* Factors that Affect Mobility, Humboldt County

Location	% Age 65 and Over	% No Vehicle	% Persons with Disability	% Poverty Rate	% Unemployment	Median Income
Humboldt County (All)	13.3	7.0	15.5	19.7	6.2	$40,830
Incorporated Areas						
City of Arcata	8.2	11.3	11.3	33.7	7.8	$32,097
City of Blue Lake	8.0	1.9	16.9	13.8	3.8	$50,329
City of Eureka	12.9	10.2	17.0	22.1	5.1	$36,525
City of Ferndale	23.0	6.1	18.4	7.3	6.1	$51,620
City of Fortuna	18.8	8.3	18.6	20.2	4.6	$38,780
City of Rio Dell	10.1	7.9	21.0	15.3	7.6	$42,443
City of Trinidad	23.8	0.0	22.4	9.6	4.9	$50,625

Source: US Census Bureau, 2008-2012 American Community Survey

Project Source: G:\11905 HumCoAssocGovernments\84410637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F1-1_Vicinity.mxd

Freeway
Highway
California Counties
Eureka City/Town

0 20
Kilometers
0 20
Miles

This map is not a Transportation Route Guide
This map is for illustrative and general planning purposes only, and though care has been taken to ensure that the data is accurate, maps and data are provided without warranty of any kind.
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 2/19/2014

Figure 1.1
Vicinity Map

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).

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 five years. For the 2014 update of the Regional Transportation Plan (RTP), HCAOG is explicitly stating that the mission of the plan is to chart the course to provide ***Variety in Rural Options of Mobility***; thus, the short name (for HCAOG's *Humboldt Regional Transportation Plan Update 2014*) is **"*VROOM*..."**

VROOM is a long-range planning document. 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. HCAOG has developed the RTP 2014 Update , *VROOM*, 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. A chapter on public participation/community input will be written after the public review period, and will be added to the final draft.

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.

VROOM is intended to fulfill the following purposes:

- 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.

PLAN GOAL & OBJECTIVES

Overall Goal: HCAOG's 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 or business/industry, and society at large.

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.

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 work towards this goal by pursuing 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, STAA compliance); 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 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, 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

This is an updated list of assumptions used in developing *VROOM*:

- 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 residents and visitors. 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.

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.

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

> 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 doesn't 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.

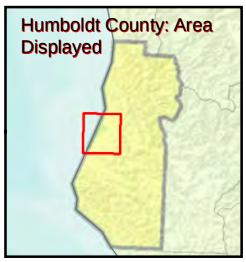
Additional strategies for promoting good connections and functionality between transportation and land uses include efforts to:

- 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 the county. The set of figures below (1.3a through 1.3d), show population centers and major destinations in the region.

Project Source: G:\11905 HumCoAssocGovernments\84106637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F1-3b_MajorDest_HumBay.mxd

- Unincorporated Town
- INCORPORATED CITY
- Elementary School
- Middle School
- High School
- College/University
- General Aviation Airport
- Freeway
- Highway
- Major Road
- Road (Other)
- Native America Res./Rancheria
- Open Space/Park



0 4
Kilometers
0 4
Miles

N

Figure 1.3b

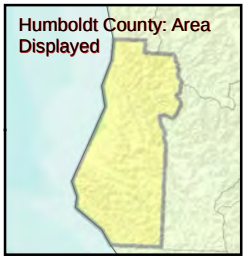
Population Centers and Major Destinations: Humboldt Bay

This map is not a Transportation Route Guide
This map is for illustrative and general planning purposes only, and though care has been taken to ensure that the data is accurate, maps and data are provided without warranty of any kind.
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 3/4/2014

Project Source: G:\111905 HumCoAssocGovernments\84410637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F1-3c_MajorDest_SoHum.mxd

- Unincorporated Town
- INCORPORATED CITY
- Elementary School
- Middle School
- High School
- College/University
- General Aviation Airport
- Freeway
- Highway
- Major Road
- Road (Other)
- Ave. of the Giants
- Open Space/Park
- Native American Res./Rancheria



0 10 Kilometers

0 10 Miles

N

Figure 1.3c

Population Centers and Major Destinations: Southern Humboldt

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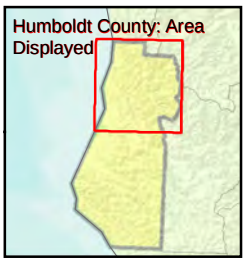
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 3/4/2014

Project Source: G:\111905 HumCoAssocGovernments\84410637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F1-3d_MajorDest_NoHum.mxd

- Unincorporated Town
- INCORPORATED CITY
- Elementary School
- Middle School
- High School
- College/University
- General Aviation Airport
- Commercial Airport
- Freeway
- Highway
- Major Road
- Road (Other)
- Native American Res./Rancheria
- Open Space/Park



0 6 Kilometers

0 6 Miles

N

Figure 1.3d

Population Centers and Major Destinations: Northern Humboldt

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Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 3/4/2014

GREENHOUSE GASES AND CLIMATE CHANGE

The most common human-produced GHG is CO_2, which constitutes approximately 84% of all GHG emissions in California (California Energy Commission, 2006). California ranks as one of the world's largest emitters of CO_2 (the most prevalent GHG) and is responsible for approximately 2% of the world's CO_2 emissions (California Energy Commission, 2006). The increasing emissions of these GHGs—primarily associated with the burning of fossil fuels and deforestation, as well as agricultural activity and the decomposition of solid waste, have 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" or "global climate change."

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 determined 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)

One of the most important legislative actions to address GHG is Assembly Bill 32 (Nunez, 2005), the California Global Warming Solutions Act of 2006. AB 32 requires the California Air Resources Board (CARB) to set statewide GHG emission reduction targets. California aims to reduce GHG emissions to 1990 levels by 2020—a reduction of approximately 30%, and by 2050 reduce emissions 80% below 1990 levels. Senate Bill 375 (Steinberg, 2007), Sustainable Communities and Climate Protection Act of 2008, provides key support in achieving AB 32 goals. Senate Bill 375 directs CARB to set regional emissions reduction targets from passenger vehicles, which are the single largest source of greenhouse gas emissions statewide, accounting for 30% of total emissions.

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.

HCAOG is presently participating in projects that address global climate change at the region level. For example, HCAOG has partnered with Caltrans-District 1 on the project to study "Climate Change Adaption for Critically Vulnerable Assets in Northwest California." This project will deliver a pilot methodology to help local agencies and residents weigh our options for "adapting" to climate change. In this case, that means options to make the region's transportation facilities more resilient to severe weather events (e.g. heatwaves, flooding, wildfires) and other climate change impacts.

HCAOG also participates in the Humboldt Bay Initiative (HBI), a multidisciplinary, multi-interest team working to apply ecosystem-based approaches to managing coastal resources and adapting to sea level rise (i.e., implementing the Humboldt Bay Ecosystem-Based Management Program). The HBI has formed a non-profit entity, the Coastal Ecosystems Institute of Northern California, which will seek grants, receive funding, and administer projects.

HCAOG staff attends, via call-in, meetings of the MPO/State Agency SB 375 Implementation Working Group.[2] The group convenes transportation planning agencies to discuss experiences, policy, resources, and other information for developing and implementing a Sustainable Communities Strategy (SCS). Although HCAOG is not required to develop an SCS, HCAOG staff participate to keep informed about what regions statewide are trying in order to achieve GHG emissions targets.

RELATED PLANS

HCAOG shall develop and implement the RTP to be consistent with these plans.

California Transportation Plan

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).

California State Wildlife Action Plan (2005)

Each State Wildlife Action Plan (SWAP), mandated by Congress, must examine the health of wildlife and prescribes actions to conserve wildlife and vital habitat before they become more rare and more costly to protect. The plans identify "species of greatest conservation need" and actions to protect them. California's SWAP (2005) identifies two such species in the North Coast area:

[2] Referred to as Senate Bill 375 or SB 375, the Sustainable Communities and Climate Protection Act of 2008 requires metropolitan planning organizations (MPOs) to develop a Sustainable Communities Strategy (SCS) as part of their regional transportation plans. HCAOG does not have to develop an SCS because Humboldt's population is too small to be an MPO.

marbled murrelet (*Brachyramphus marmoratus*) and coho salmon (*Oncorhynchus kisutch*). The RTP's "Environmental Stewardship" objective is consistent with this plan, and potential impacts to these species and their habitat is assessed in environmental documents prepared for the RTP Update 20114 (Program EIR) and subsequently for proposed transportation projects.

The California Department of Fish and Wildlife is developing a 2015 Update (www.dfg.ca.gov/swap, accessed June 2014).

Blueprint Planning

HCAOG was selected to participate in the State of California's Regional Blueprint Planning program. Through this program, transportation planning agencies statewide have developed preferred growth scenarios (or "blueprints") for long-term planning horizons. HCAOG calls its own Blueprint Planning Program "**imagine humboldt!**" to emphasize its goal to serve as a regional conceptual visioning process. It addresses growth and development from a broad perspective, beyond jurisdictional boundaries. **imagine humboldt!** looks out to 2050, well beyond the traditional 20 year planning horizon.

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.

Rural California/Oregon Advanced Transportation Systems (COATS)

The Rural COATS identified a plan and program for using Intelligent Transportation Systems (i.e., transportation technology applications such as traffic signal control systems, speed cameras, etc.) in rural portions of Northern California and Southern Oregon (Caltrans and Oregon Department of Transportation, 1998-1999). Applying ITS effectively serves to enhance safety and emergency response, improve the movement of people, good, services and travel information, reduce congestion, improve commercial vehicle operations, and increase economic activity.

ACCOMPLISHMENTS SINCE THE 2008 RTP

Table *Intro*-1, on the following pages, lists the transportation projects that HCAOG member jurisdictions and Caltrans have completed since 2008, when HCAOG last adopted the RTP (Regional Transportation Plan). The completed projects are from the 2008 RTP's Action Plans for each mode, unless otherwise noted.

Table *Intro*-4. Regional Transportation Plan Projects Completed Since 2008

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
City of Arcata	Highway & Road	"H" Street; Sunset Avenue; and Alliance Road, 29th Street to Spear Avenue	Micro-paving	2008 Prop 1B
	H & R	Janes Road – Spear Avenue to Upper Bay Road	Overlay	2011 Gas Tax & General Fund
	H & R	Spear Avenue – Ribeiro Lane to Alliance Road	Overlay	2011 Gas Tax & General Fund
	H & R	Samoa Blvd. – Union Street to Bayside Road	Rehabilitation	ARRA, General Fund
	H & R	11th Street – "G" Street to "F" Street	Rehabilitation	2012 Gas Tax & General Fund
	H & R	Alliance Road – 27th Street to 29th Street	Overlay	2010 Gas Tax & General Fund
	H & R	Spear Avenue – Janes Road to Ribiero	Overlay	2011 Gas Tax & General Fund
	H & R	Ericson Way – Belle Ct. to Giuntoli Lane	Micro-paving	2012 General Fund
	H & R	L K Wood Blvd. – 14th Street to Granite Avenue	Rehabilitation	2011 Gas Tax & General Fund
	H & R	Valley East Blvd. – Giuntoli Lane to end	Rehabilitation	2013 Gas Tax & General Fund
	H & R	Valley West Blvd. – Giuntoli Lane to end	Rehabilitation	2013 Gas Tax & General Fund
	H & R	Various Locations	Railroad crossings, 16 locations, rehabilitation	2007/08 STIP
	H & R	Residential City Program	Micro-paving	2012/13 Gas Tax & General Fund
	H & R	Foster Avenue to Sunset Blvd. Extension (Foster Avenue to Sunset Avenue between Eastern Avenue and Jay Street)	(In-progress, 95% design) Construct new roadway and bike-pedestrian pathway. Rehabilitate existing roadway with bike lanes and sidewalk as needed. Traffic calming/ pedestrian improvements at Sunset	
	Bicycle & Pedestrian	11th Street Corridor – Janes Road to Bayview Street	Class II/III sharrows (share-the-road arrows)	
	B & P	11th Street – Q Street to Janes Road	Class II bike lane	

Table continues on next page.

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
Arcata & Mad River Transit System	Public Transit & Paratransit	Replacement buses and vans (2008-2011)		5311 & TDA
City of Blue Lake	*(Not listed in the RTP)*	Fourth Avenue	Reconstruction (sidewalks, drainage, asphalt)	2008 Community Development Block Grant
City of Eureka	Bicycle & Pedestrian	Harris Street – "I" Street to Hall Avenue	Class II bike lane from "J" Street to "R" Street, and Class III bike facility from "R" Street to Harrison Avenue	2011 Gas Tax
City of Ferndale	*(Not listed in the RTP)*	Herbert Street – Rose Avenue to Dewy Avenue	Reconstruction (sidewalk, drainage, asphalt)	2008 FTIP/FSTIP
City of Fortuna	*(These projects were not listed*	Fortuna Blvd. – Main Street to Newburg	Reconstruction	2008 ARRA
	in the RTP 2008)	Ross Hill Road	Overlay	Prop 1B
		Fortuna Blvd. – Kenmar to Strongs Creek	Overlay	City funds
		St. Joseph – Redwood Way to end	Overlay	TDA
		Meadow Brook and Sunny Brook – Newburg to end	Overlay	TDA/Gas tax
City of Rio Dell	Highway & Road	Wildwood Avenue	Downtown roadway improvement project	
	H & R	Wildwood Avenue and View Street	Paved from Side St. to Eagle Prairie Bridge	2011/12 STIP
	H & R	Third & Fourth Avenue	Rehabilitation	2008 CDBG
	Bicycle & Pedestrian	Center Street and Davis Street – Wildwood to Ireland	Construct pedestrian refuge, sidewalks, bulb-outs, speed bumps, school access trail, striping, and signing	2009 SR2S
	B & P	Wildwood Avenue – Scotia Bridge to Davis Street Corridor	Corridor improvement	2008 STIP/HSIP Grant
	B & P	Main Street/Wildwood Avenue	Davis Street to South City Limit Enhanced Class II	

Table continues on next page.

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
City of Trinidad	Highway & Road	Main & Trinity	Road, sidewalk, ramp, and pedestrian improvements (School to Hwy 101)	2008 Federal
	H & R	TEA Gateway Project	Road, sidewalk, ramp, pedestrian improvements, and beautification	2008 State
	H & R	Azalea Avenue, Pacific Avenue	Reconstruction – Azalea from Edwards to Pacific, and Pacific (approx. 500 ft.)	2007/08, 08/09 STIP
	H & R	Trinidad Park & Museum Access	Construction of road access	2007/08, 08/09 ARRA
County of Humboldt	Highway and Road	Alderpoint Road (20 locations)	Storm damage repair	FHWA with Caltrans
	H & R	Benbow Drive	Storm damage repair	FEMA/OES
	H & R	Blue Slide Road	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Briceland-Thorne Road	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Butler Valley Road	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Cathey Road (2 locations)	Storm damage repair	FEMA/OES
	H & R	Elk Creek Road	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Kneeland Road	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Lower Cappell Road	Storm damage repair	FEMA/OES
	H & R	Mattole Road (15 locations)	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Sprowel Creek Road (3 locations)	Storm damage repair/earthquake	FHWA (o/s Caltrans)
	H & R	Thomas Road	Storm damage repair	FEMA/OES
	H & R	Tompkins Hill Road (2 locations)	Storm damage repair/earthquake	FHWA (o/s Caltrans)
	H & R	Trinidad Scenic Drive (3 locations)	Storm damage repair	FEMA/OES
	H & R	Zenia Bluff Road	Storm damage repair	FHWA (o/s Caltrans)
	H & R	Martin Ferry	Bridge repair	Highway Bridge Program
	H & R	Trinidad Scenic Drive	Repair & realignment	BIA
	H & R	Williams Creek	Bridge replacement	Highway Bridge Prog.
	H & R	Alderpoint, Mattole, Maple Creek		STIP
	H & R	Briceland-Thorne Road	Curve correction	High Risk Rural Roads
	H & R	Grassy Creek	Culvert replacement	Fish passage
	H & R	Mill Creek		Fish passage
	H & R	Indian Creek	Bridge	Fish passage
	H & R	Old Arcata Road/Myrtle Avenue: Three Corners to Stephens Lane	Widen shoulder and rehabilitate roadway	

Table continues on next page.

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
County of Humboldt cont'd	H & R	Fieldbrook Road – PM 0.0. to 2.8	Overlay	STIP/Prop 1B
	H & R	Central Avenue shoulder widening	Widen shoulders from Turner Draw to Bella Vista	STIP
	H & R	Humboldt Hill Road – Hwy 101 to PM 1.0	Overlay	STIP/Prop 1B
	H & R	Indianola Cutoff – City of Eureka to Myrtle Avenue	Reconstruct and overlay	STIP/Prop 1B
	H & R	Murray Road PM 5.1 to Fieldbrook Road PM 2.8	Overlay	STIP/Prop 1B
	H & R	Railroad crossings	Reconstruct railroad crossings at various locations	STIP/Prop 1B
	H & R	Redwood Drive, Redway to Hwy 101	Overlay	STIP/Prop 1B
	H & R	Walnut & Hemlock intersection	Roundabout or signals with dedicated turn pockets – partially constructed	
	H & R	School Road – from Fischer to Washington	Widen to provide sidewalks, bike lanes, turn lanes (ongoing)	STIP/Prop 1B/ developer fees
	Bicycle & Pedestrian	Fieldbrook Road – PM 2.8–5.5	Widen shoulders for pedestrians and bicycles	2008 STIP/Prop 1B
	B & P	Freshwater Road – Three Corners to Howard Heights	Pave and striped bike lanes	Safe Routes to School/Prop 1B
	B & P	Herrick	Sidewalks	2009 STIP
	B & P	Humboldt Hill Road – Hwy 101 to Donna Drive	Enhanced Class III	2009 STIP
	B & P	Myrtle Ave., Harris St., and Lucas Road	Sidewalks to infill existing system	2009 STIP/Prop 1B
	B & P	Myrtle Ave/Old Arcata Road – Three Corners to Bayside Cutoff	Enhanced Class III	2008 STIP
	B & P	Blue Lake Blvd.	Sidewalks and four foot shoulders	
	B & P	Ridgewood Drive – Elk River Road to Walnut Drive	Class II	
	B & P	Harris Street – Harrison Street to Hall Avenue	Class II	
	These projects were not listed in the 2008 RTP	Airport Road – State Route 101 to Central Avenue	Overlay	2009/10 ARRA
		Bald Hills Road (3 locations)	Asphalt overlay and/or realignment	BIA
		Butler Valley Road, PM 5.8	Storm damage repair	FHWA (o/s Caltrans)
		Central Avenue	Sidewalk	STIP, TE
		East Branch Road slide PM 0.36	Storm damage repair	FHWA (o/s Caltrans)
		East Blue Rock Road PM 0.40	Storm damage repair	FHWA (o/s Caltrans)

Table continues on next page.

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
County of Humboldt cont'd		Freshwater Road	Overlay	SR2S, Prop 1B
		Fulmor Road – PM 1.40–1.88	Storm damage repair	FHWA (o/s Caltrans)
		Harris Street		ARRA
		Hiller & Pickett		STIP
		Hubbard & Myrtle	Signalization	Prop 1B, developer fees
		Island Mountain Road PM 2.20	Repair 2010 earthquake damage	FEMA/OES
		Lucas Road		ARRA
		McKinleyville & Washington Avenue		STIP
		Monument Road, PM 0.00	Storm damage repair	FHWA (o/s Caltrans)
		Monument Road, PM 0.18	Repair 2010 earthquake damage	FEMA/OES
		Old Briceland Road (2 locations)	Storm damage repair	FHWA (o/s Caltrans)
		Pine Hill	Bridge	
		Sutter Road		STIP
		Trinidad Pier		TE
		Upper Cappell Road	Storm damage repair	FEMA/OES
		Walnut Drive	Overlay	ARRA/STIP
		Warren Creek	Replace culvert	
		Wilder Ridge Road PM 5.30		
		Williams Creek Road PM 1.02	Repair 2010 earthquake damage	FEMA/OES
Caltrans	Highway & Road	US 101/SR 36	Interchange and frontage road	2008/09 STIP
	H & R	US 101/SR 36	Interchange, construction	2006 STIP
	H & R	US 101/SR 101	Eureka-Arcata corridor improvement	2007/08 STIP
	H & R	US 101 - Near Phillipsville, from 1.4 miles south of Richardson Grove to south of Prairie Creek Park at various locations.	Reconstruct guard rail Collision reduction	2010/11 SHOPP
	H & R	US 101 – Near Arcata, from south of 14th Street to north of Sunset Ave.; 3.5 miles south of Del Norte County line (PM 133.6)	Repair slipout, realign roadway, and install drainage Emergency response	2008/09 SHOPP
	H & R	US 101 – Near McKinleyville, at the Vista Point	Required wetland mitigation Emergency response	2008/09 SHOPP
	H & R	US 101 – In and near Rio Dell, from Eel River Bridge and overhead to 0.5 mile south of Van Duzen River Bridge	Rehabilitation	2008/09 SHOPP

Table continues on next page.

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
Caltrans cont'd	H & R	US 169 – Near Weitchpec, from 8.9 miles east of Johnsons to 3.7 miles west of Route 96	Bridge replacement Roadway preservation	2008/09 SHOPP
	H & R	US 169 – In Humboldt County, at various locations 1.9 miles west of Cappell Creek Bridge to 0.9 mile west of Route 96	Repair slipouts, drainage and roadways. Emergency response	2008/09 SHOPP
	H & R	US 169 – Near Weitchpec, 3.4 miles west to 2.6 miles west of Cappell Creek Bridge	Repair slipouts, drainage and roadways. Emergency response	2009/10 SHOPP
	H & R	US 254 – Near Miranda, 0.6 mile south of Post Office; 0.2 mile north of Bridge Creek	Repair slipouts Emergency response	2009/10 SHOPP
	H & R	US 254 – Near Miranda, 1.3 miles south of Post Office; 0.8 mile south of Post Office	Repair slipouts Emergency response	2008/09 SHOPP
	H & R	US 254 – Near Redcrest, at various locations 1.6 miles north of Mattole Road to 0.8 mile south of Bear Creek Bridge	Repair slipouts Emergency response	2009/10 SHOPP
	H & R	US 254 – Near Miranda, at 0.3 mile south of Miranda Bridge Road; also 0.4 mile north of Bridge Creek #4	Repair slipouts Emergency response	2008/09 SHOPP
	H & R	US 299 – West of Willow Creek, 0.8 mile west of Redwood Creek Bridge	Construct Wall Emergency response	2008/09 SHOPP
	H & R	US 36 – Near Bridgeville, from 0.6 mile west of Bridgeville Post Office to 0.3 mile east of Little Larabe Creek Bridge	Repair slipouts Emergency response	2009/10 SHOPP
	H & R	US 36 – Near Bridgeville, from 3.8 to 4.3 miles east of Little Larabe Creek Bridge	Repair slipout Emergency response	2008/09 SHOPP
	H & R	US 36 – Near Bridgeville, 0.1 mile west of Van Duzen River Bridge	Repair slipout Emergency response	2008/09 SHOPP
	H & R	US 36 – Near Carlotta, from 0.7 mile to 2.5 miles east of Carlotta Post Office	Widen shoulder Mobility	2010/11 SHOPP
	H & R	US 96 – Near Hoopa, from 0.8 mile south of Rock Chute Bridge to 1.9 miles north of Sidehill	Install guardrail Collision reduction	2009/10 SHOPP
	H & R	US 96 – Near Willow Creek, from 0.2 mile west of Pipeline overcrossing to 2.6 miles west of Klamath River	Reconstruct roadway, repair slope and drainage Emergency response	2009/10 SHOPP
	H & R	US 96 – Near Weitchpec, from 0.1 mile west of Route 169 west to 0.4 mile east of Weitchpec Rd	Repair roadway, construct drainage gallery wall; Emergency response	2008/09 SHOPP

Table continues on next page.

Jurisdiction	Mode*	Project Name/Location	Project Description	Funding Source
Caltrans cont'd	H & R	US 96 – Near Orleans, 0.3 mile west of Beach Access Road to 0.8 mile west of Siskiyou County	Repair roadway and drainage Emergency response	2008/09 SHOPP
	H & R	US 96 – Near Weitchpec, 1.2 miles west of Klamath River Bridge	Repair slipout Emergency response	2008/09 SHOPP
	H & R	US 96 – Near Hoopa, at 0.3 mile east of Tish Tang Sidehill Viaduct	Repair slipout Emergency response	2008/09 SHOPP
Humboldt Bay Harbor District	GM	Redwood Marine Terminal 1	Improvements, including demolition of dilapidated building and relocation of Berth 2 to improve access to the Nat'l Marine Research & Innovation Park	Harbor District Funds
	GM	Fields Landing	Improvement plans including marine fabrication facilities and environmental restorations	Harbor District Funds
	(These projects were not listed in the 2008 RTP)	Samoa Industrial Waterfront Transportation Plan	Plan, including rail study, for National Highway System classifications of selected routes	Caltrans/FHWA
		Freshwater Tissue Pulp Mill & National Marine Research & Innovation Park	Purchase and initial planning & cleanup	EPA Grants – Phase 1 & 2
		District Strategic Plan	Update Plan	Harbor District Funds
		Bay channel monitoring	Purchase and placement of side scan sonar for monitoring bay channels	Dept of Homeland Security (DHS)
		Water Trails Project	Planning recreation improvements on the bay	Coastal Conservancy
		Working group	Participation in Humboldt Bay Harbor Working Group	Harbor District Funds
		Sea level rise	Study of climate change and sea level rise effects on levees and dikes	Coastal Conservancy
		Dredge purchase	Pending agreement with the City of Eureka to purchase dredge	Harbor District Funds
		Upland sediment disposal	Study in progress for sediment disposal (also addresses sea level rise)	Coastal Conservancy
		Fire Boat & Rescue Boat	Purchased and placed into service	DHS
		Debris removal	Marine and debris removal in cooperation with the Wiyot Tribe	Harbor District Funds
		Woodley Island Marina	Lighting improvements and electric metering	Harbor District Funds & DHS

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2. COMPLETE STREETS ELEMENT

THE COMPLETE STREETS ACT

The Complete Streets Act requires California cities and counties to adopt transportation plans that accommodate all users of roadways, including pedestrians, transit, bicyclists, the elderly, motorists, and the disabled. 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.

> "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."

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.

- 2010 RTP Guidelines

This is the goal and intent of implementing Complete Streets policies and programs, as stated in the California Department of Transportation's "Implementation Action Plan" (Caltrans 2010).

Transportation planning in California now explicitly 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..." This language is adopted in the California Complete Streets Act of 2008.

Caltrans has adopted a "Complete Streets" directive which reads, in part:

> The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California...
>
> …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-R1, 2008)

HCAOG's objectives are consistent with making complete streets that are safe to traverse for pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

Below we first describe the region's existing roadway system, which serves motorists, bicyclists, pedestrians, and transit users. (Trails are discussed in the Trails Element.) Second we describe goals, policies, and objectives. Then, in the Needs Assessment and the Action Plan, we describe what infrastructure improvements (projects) and programs the region needs most to provide "complete streets." The element ends by listing Performance Measures to apply to the regional "complete streets" system.

EXISTING ROADWAY SYSTEM

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

Local streets and roads are critical to provide a functional, interconnected, multi-modal transportation system. Roads are often the main–and sometimes the safest, if not the only–access available between rural and urban areas, or between developed and natural areas. When planning and building the roadway system, we need to consider the needs for traveling and transporting goods via truck, automobile and motorcycle, emergency vehicle, bus, bicycle, and by foot or wheelchair.

> 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.
>
> *- 2010 RTP Guidelines*

The broad use of the term "roadway" includes highways, streets, and paved and unpaved roads. Depending on space (within the right-of-way) and intended uses, a roadway will include some or all of the following: travel lane(s), median, shoulder, sidewalk, on-street parking spaces, bikeways, and gutters or ditches.

In Humboldt County, we have approximately 1,400 miles of county roads and city streets, 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.

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.

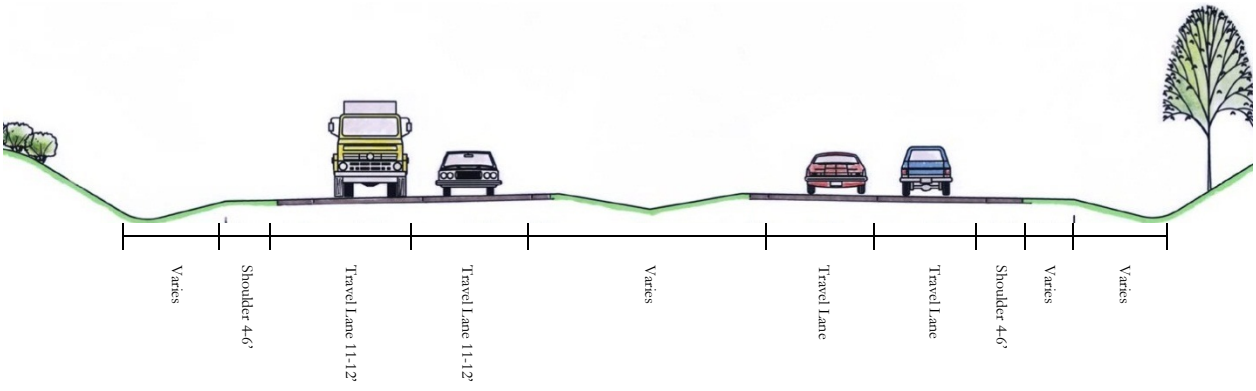
Table *Streets-1* lists regionally significant roadways identified by City and County staff.

Table *Streets-1*. 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	

[1] "ASCE Infrastructure Report Card for Humboldt County Roads and Bridges," July 2014.

Typical cross-section of 4-lane divided roadway



Source: www.aboutcivil.com

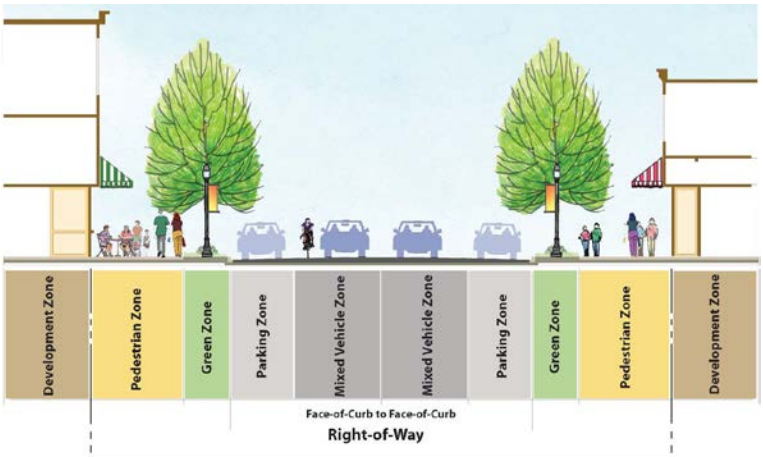
STATE HIGHWAYS

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 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	32 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	Klamath (U.S. 101) to Klamath Glen
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

State highways in Humboldt County are under the jurisdiction of Caltrans District 1. 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.

A Conceptual Road Design for a "Main Street"



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

ROADS ON STATE, FEDERAL, OR TRIBAL LAND

Federal and/or State agencies have jurisdiction over roads within public resource lands in Humboldt County, such as in the National and State Parks or in the Bureau of Land Management areas. The agencies responsible for maintaining non-local roadways like these include, but are not limited to, the California Department of Transportation (Caltrans), 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 jurisdictions and are maintained by the respective entity.

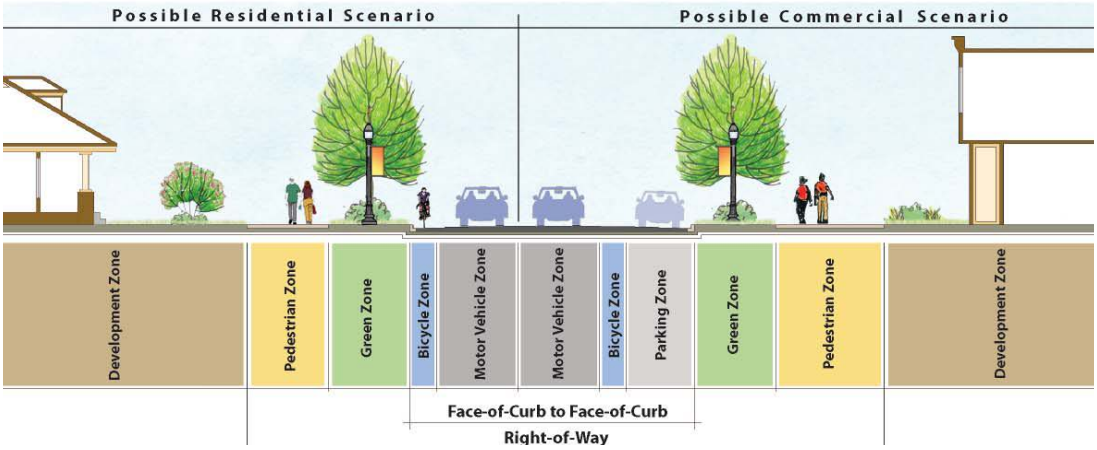
LOCAL ROADS & STREETS

Local streets and roads are where motorists, bicyclists, and pedestrians most commonly share space; therefore, it is where "complete streets" opportunities are highest. The local system is mostly public right-of-way, owned and managed by cities or the County. Roads on private property must be maintained by the property owner, unless a public agency levies an assessment fee to maintain them.

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 (pedestrians include people in wheelchairs and strollers). They are more commonly built in urban areas than rural areas (i.e., in cities and larger unincorporated communities more than in outlying communities in Humboldt). 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.

A Conceptual Road Design for an "Avenue"



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

In more walkable neighborhoods, residential and commercial properties have greater resale value.

- Brookings Institute, 2012

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 Amenities

(Included by reference is the "Humboldt Regional Bicycle Plan" (HCAOG 2012).)
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 (e.g., on a roadway).

Humboldt's bikeways are classified according to Caltrans' definitions for Class I, II, and III bikeways (see Table *Streets-2*). 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.

In Humboldt County most bikeways, of any class, are located in urban areas (excluding solely recreational trails). For example, there are several bike lanes and bike routes in Eureka, Arcata, and Fortuna, and in some urban unincorporated areas of the County.

The popular Hammond Coastal Trail is a multi-modal trail and the county's longest bike path by far. The Hiksari' Trail, which just opened in 2012, 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 planned 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. (Trails are discussed further in the RTP's Trail Element.)

Other bike facilities include bike parking, bike racks on buses, bike lockers, changing stations, air pump stations, and signage and pavement markings. As a whole, functional bicycle parking in the region is inconsistent; not all areas meet standards for bicycle parking quantity and/or quality. Bicycle parking is found most often in denser downtown and commercial areas, especially in the bigger cities of Eureka and Arcata, and in McKinleyville. Ideally, bicycle parking is located in or adjacent to activity centers, is secure, easy to use, and is sheltered from weather.

Table *Streets-2*. 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 (1.5 meters), with a 5 feet (2.4 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 (Truesdale Avenue to Herrick/101 park-n-ride), Waterfront Boardwalk. • Arcata: 18th Street bridge-101 overpass.
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.
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*.

LEVEL OF SERVICE (LOS)

In the U.S., it is standard practice for transportation planning agencies and departments to assess road traffic conditions using the "level of service" (LOS) concept, described below. HCAOG prioritizes bicycle and road projects, in part, by rating the LOS of current and proposed bicycle and road facilities. Bicycle LOS modeling has components that can apply to pedestrian facilities, too. For example, a pedestrian LOS can help judge how pedestrians perceive hazards/safety at an intersection. A pedestrian LOS could be used to prioritize projects, too.

To apply the LOS concept, we collect traffic data for a roadway segment or an intersection (usually during peak traffic hours); the

In a nationwide poll, forty percent of bicyclists surveyed (representing over 25 million people) and over 33% of non-cyclists (22.7 million people) said they would commute by bike if they had access to safe bike lanes on roads and highways.

– Rodale Press, 1995

Table *Streets-3*. LOS Characteristics for Bike Paths and Bike Lanes

Bicycle Level of Service						
Characteristics	**A**	**B**	**C**	**D**	**E**	**F**
Flow Rate[a] (bikes/minute/feet)	<4.4	4.4–6.6	6.7–10.0	10.1–11.9	12.0–13.2	Variable
Density (bikes/square feet)	<0.005	0.005–0.007	0.008–0.012	0.013–0.017	0.018–0.025	>0.025
Cycling Speed	≥11.0	10.5 –11.0	9.5–10.4	8.0–9.4	6.0–7.9	<6.0

[a] Minimum bike path or bike lane width for which these figures apply are: LOS A-8.0 ft; LOS B-7.5 ft; LOS C-3.5 ft; and LOS D-3.2 ft. The greater widths shown for LOS A and B are necessary to allow free overtaking.

Source: *Fundamentals of Traffic Engineering*, 13th Edition. Institute of Transportation Studies, University of California, Berkeley.

results determine an LOS "grade" from A to F. Generally, LOS A indicates no traffic congestion, and F indicates the worst congestion.

The middle grade, LOS C, indicates that traffic flows during peak hours. For example, most drivers would have to wait only one signal cycle before proceeding through signalized intersections. Many jurisdictions nationwide, including in Humboldt County, have policies making LOS C the lowest acceptable grade, and/or LOS D under certain circumstances.

Bicycle Level of Service Modeling

Bicycle LOS modeling helps predict what conditions a facility does or will offer cyclists, such as the average flow rate, speed, and density a cyclist would experience in a given bike lane. The bicycle LOS can be expressed on a scale of A to F. Table Streets-3 shows typical bicycle LOS measures.

For a full discussion of Bicycle LOS, refer to the *Humboldt Regional Bicycle Plan* (2012) (available at www.hcaog.net/projects).

"If we are to meet the goals of doubling the current levels of bicycling and walking in the United States while decreasing by 10% the number of crash-related injuries and deaths, coordinated and committed effort must be put forth at every level of government."

- Federal Highway Administration, 1994

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.

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.

"We have a moral responsibility to make change as soon as possible."

– Commissioner Gabe Klein, Chicago Dept. of Transportation

In 2011, Chicago was listed by *Bike Magazine* as the 10th most friendly city for bicycle riding in the U.S. One year later, it rose to No. 5. Chicago plans to lay down 645 miles of bike lanes by 2020.

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: COMPLETE STREETS/BALANCED MODE SHARE

Specific "Complete Streets Element" objectives:

- *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.*

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 high level of public support for a dedicated bicycle and pedestrian trail in the NCRA and Caltrans corridor between Eureka and Arcata (the "Humboldt Bay

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 to augment funding for pedestrian, bicycle, and transit facility improvements. (*Also supports objective: Economic Vitality, 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. HCAOG will accelerate programming for regional projects that retrofit existing roads to provide safe and convenient travel by all users. *(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.

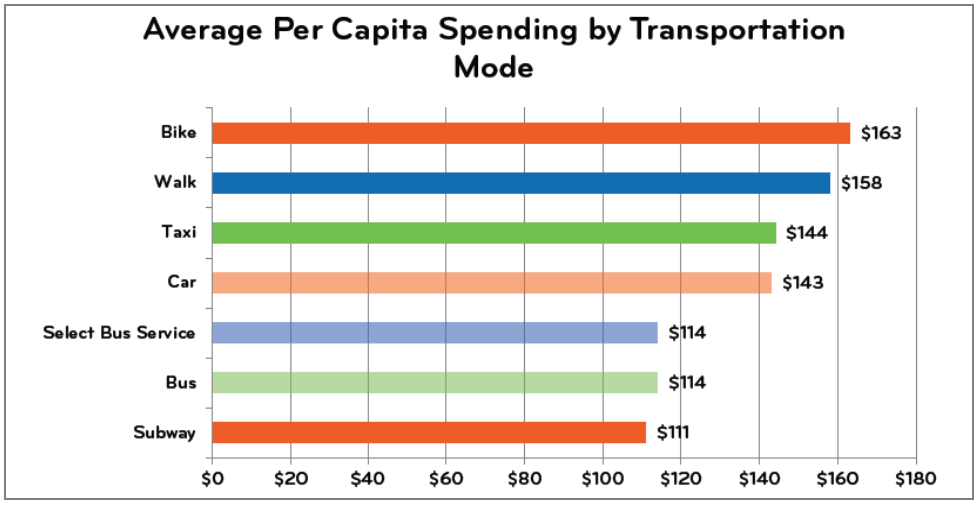
OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Specific "Complete Streets Element" objectives:

- *Maintain the roadway system in a condition that maximizes resources and minimizes disruptions.*
- *HGOAG shall identify and help secure the financial resources necessary to accommodate Complete Streets policies.*
- *Maintain existing infrastructure in order to maximize use and minimize costs. Preserve corridors for future highways and major streets, consistent with adopted state, regional, and local plans.*

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

Policy CS-7 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.)*



Source: In "Bicycling Means Business," Darren Flusche, League of American Bicyclists, et al. March 5, 2013.

Policy CS-8 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.)*

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

Specific "Complete Streets Element" objective:

- *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-9 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-10 Carry out policies and program funding for projects that will help achieve the goals of California Assembly Bill 32: Global Warming Solutions Act. 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. *(Also supports objectives: Complete Streets/Balanced Mode Share, Economic Vitality, Equitable & Sustainable Use of Resources, Safety)*

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Policy CS-11 HCAOG shall promote equity, cost effectiveness, and modal balance in programming and allocating funds to regionally significant projects. *(Also supports objectives: Complete Streets/Balanced Mode Share, Economic Vitality)*

OBJECTIVE: SAFETY

- ***Specific "Complete Streets Element" Objective :*** *Improve overall safety for motorists, bicyclists, pedestrians, and transit users on all county, city, and state highways and streets.*

Policy CS-12 HCAOG will support and collaborate with local and regional efforts to advance Safe Routes to School programs. *(Also supports objective: Complete Streets/Balanced Mode Share)*

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.

> The condition of local streets and roads continues to deteriorate due to the funding shortfalls and will be further challenged by the escalating repair costs in future years. Adequately investing in the local system is critical to protect the public's current investment.
>
> *- 2010 RTP Guidelines*

- *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 for decades. The current backlog, estimated as of August, 2013, is over $217 million (see Table *Streets-4*).

BICYCLE & PEDESTRIAN NEEDS ASSESSMENT

Bicycle and pedestrian needs were assessed, in part, from information in the *Humboldt Regional Bicycle Plan* (HCAOG, 2012) and the *Humboldt County Pedestrian Needs Assessment Study* (HCAOG, 2003).

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

Table *Streets-4*. Roadway Maintenance & Rehabilitation Backlog (August, 2013)

Location	Maintenance Backlog ($ million)	Rehabilitation Backlog ($ million)	Total ($ million)
Arcata	12.95	9.82	22.77
Blue Lake	3.50	8.00	11.50
Eureka	1.40	14.70	16.1
Ferndale	3.30	0	3.30
Fortuna	1.50	4.00	5.50
Rio Dell	1.30	4.20	5.50
Trinidad	0.12	0.44	0.56
County of Humboldt	--	--	150.00
Karuk Tribe (roads within Humboldt County)	0.88	0.93	1.81
		TOTAL	217.04

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

Community members who participated in Humboldt County's *General Plan Update Health Impact Assessment* identified the following needs for bicycle and pedestrian travel in Humboldt: pedestrian

and bike friendly traffic signals; sidewalks and marked crosswalks; lighting; marked, designated and mapped bike lanes; speed limits; safe and dry bike parking; community connectivity; and bike safety education (County of Humboldt, 2008). In focus groups conducted for the General Plan Update, participants said they saw that health and land use planning are connected, and they prioritized non-motorized transportation for its health benefits. Other public opinions said that pedestrian, bicycle, and equestrian travel was a priority; others approved of non-motorized improvements as long as property rights were protected and conditions were maintained (County of Humboldt, 2001).

ACTION PLAN: PROPOSED PROJECTS

Table *Streets-5*, 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) prioritized all projects based on the RTP's main objectives. Projects that will meet the most objectives are the top priorities.

The full list of regional complete streets projects is in Table *Streets-6* (See Appendix 1).

For a more detailed, comprehensive description of each jurisdiction's bikeway facility improvements (constrained and unconstrained), refer to the *Humboldt Regional Bicycle Plan* (HCAOG 2012), and the respective bikeway master plans for the City of Arcata, City of Eureka, and County of Humboldt.[3] The pedestrian facility improvements for each of the jurisdictions are based on the *Humboldt County Pedestrian Needs Assessment Study* (HCAOG, 2003).

> Investment in local streets and roads is an investment in public safety, economic growth, goods movement and farm to market needs. Adequately investing in the local system is critical to protect the public's current investment.
>
> *– 2010 RTP Guidelines*

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

Table *Streets-5*. Top Priority Regional Complete Streets Projects*

Jurisdiction & 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)
Arcata: Hwy 255 at 101 Roundabouts	ST	X	X	X	X		X	Roundabouts, add ped-bike access across bridge, add transit park-and-ride, remove 1 mile of paved roadway (mitigation)	Not funded	2018-20	$2,000
Arcata: Old Arcata Road Buttermilk to Jacoby Creek Rd	ST	X	X	X	X	X	X	Rehab, ped-bike and calming improvements, gateway at Jacoby Creek Road	STIP, Measure G	2014-16	$950
Arcata: Valley East and Valley West Improvement project	ST	X	X	X	X	X	X	Roadway rehab with improvements for bike, ped, transit, landscaping and gateway	Not Funded. Measure G match	2016	$1,000
Blue Lake: South Railroad Avenue, Chartin Way to Broderick Lane	ST	X	X	X		X	X	Repave and add pedestrian improvements "Annie and Mary" Trail, rehab and reconstruction	Not Funded	2018/19	$2,000
Blue Lake: Greenwood Road/Railroad Avenue/Hatchery Road from Blue Lake Blvd. to Mad River Bridge	ST	X	X		X	X	X	Overlay and pedestrian improvements, rehabilitate and construction	Not Funded	2016/17	$3,000
Caltrans with Hoopa Valley Tribe: SR 96 - Downtown Hoopa	ST	X	X	X	X		X	Pedestrian safety, traffic calming, drainage improvements	Partially Funded	2013-16	$4,400
Caltrans: 101 – from Arcata Slough Bridge to Arcata Overhead	ST	X	X	X	X	X	X	Eureka/Arcata capital preventative maintenance and restripe	2012 SHOPP	2013/14	$14,000
Caltrans: 101 Corridor Improvement Project	ST	X	X	X	X	X	X	Safety improvements at uncontrolled intersections	STIP ITIP	2017/18 2017/18	$24,658 $15,000
Caltrans: Hwy 255 – through the Community of Manila	LT	X	X	X	X	X	X	Streetscape improvements to enhance pedestrian safety	Not Funded	TBD	$$2,200
Caltrans: SR96 - Trinity River Bridge in Downtown Hoopa	ST	X	X	X	X	X	X	Pedestrian and non-motorized vehicle crossing of Trinity River	Not Funded	TBD	$1,000

*See Table *Streets-6* for the full list of projects.
1. Short-term is 0-10 years; long-term is 11-20 years.
2. Assumes an annual 3% rate of inflation.

Jurisdiction & 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:101 – Intersection of Broadway, Wabash and Hawthorne	ST	X	X		X	X	X	Intersection improvement	Not Funded	TBD	$3,000
Caltrans: 101 –4th and 5th Streets from Broadway to Eureka Slough Bridge	ST	X	X		X	X	X	Eureka capital preventative maintenance	SHOPP (PID)	TBD	TBD
County of Humboldt with Karuk Tribe: Red Cap Road, SR96 to Shivshaneen Road, Orleans	ST	X	X		X	X	X	Shoulder widening, pedestrian-bike improvements	TE, HBP, Tribal FHWA TTP	2014/15	$1,600
County of Humboldt: Alderpoint/ Mattole/Maple Creek	LT		X	X	X	X	X	Reconstruct rural routes	Not Funded	TBD	$100,000
County of Humboldt: Bell Springs Road	LT		X	X	X	X	X	Improve with Mendocino County	Not Funded	TBD	$10,000
County of Humboldt: Briceland/ Shelter Cove Roads	LT		X	X	X	X	X	Reconstruction/safety improvements	Not Funded	TBD	$10,000
County of Humboldt: Central Avenue	ST	X		X	X	X	X	Shoulder widening & overlay	Not Funded	TBD	$900
County of Humboldt: Fairfield, Meyer, Eureka	LT	X	X	X	X	X	X	Route improvement	Not Funded	TBD	$1,000
County of Humboldt: Fern Street, Cutten	LT	X	X	X	X		X	Complete connection	Not Funded	TBD	$1,000
County of Humboldt: Garberville	ST	X	X		X	X	X	Context sensitive modifications	Not Funded	TBD	$1,500
County of Humboldt: Hammond Trail Bridge - Mad River	ST	X		X	X	X	X	Replace existing bridge	Not Funded	TBD	$3,200
County of Humboldt: Harris to Fern Street, Cutten	LT	X	X	X	X		X	Connector road	Not Funded	TBD	$2,000
County of Humboldt: Herrick & Elk River Intersection	LT	X	X	X	X	X	X	Signalize	Not Funded	TBD	$900

Jurisdiction & 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: Honeydew Bridge	ST	X	X	X	X	X	X	Replace existing bridge	HBP	2014	$6,200
County of Humboldt: Humboldt Hill to Thompkins Hill	LT	X	X	X	X		X	Connector road	Not Funded	TBD	$2,000
County of Humboldt: McKinleyville Avenue Extension	ST	X	X	X	X		X	Connect to School Road	Not Funded	TBD	$500
County of Humboldt: New Navy Base Road	LT	X	X	X	X	X	X	Reconstruct from SR 255 to Bay	Not Funded	TBD	$1,500
County of Humboldt: School Road, McKinleyville	ST	X	X	X	X	X	X	Sidewalks & bike lanes with roundabout Washington to Salmon	Prop 1B & Developer	2013	$1,400
County of Humboldt: Union Street	ST	X	X	X	X	X	X	Shoulder widening & geometric improvements	STIP	2013/14	$2,881
Eureka: 6th Street from I Street to Myrtle Ave, and 7th Street from Broadway to J Street	ST	X	X	X	X	X	X	Road rehabilitation, ADA, bike lanes, bus pullouts	Not funded	TBD	$500
Eureka: H Street from 7th Street to Harris Street	ST	X	X	X	X	X	X	Road rehab, ADA and bus pullouts	Not funded	TBD	$700
Eureka: Harrison Ave. from Harris Street to Myrtle Ave.	ST	X	X	X	X	X	X	Two-way left-turn bike lanes, bus pullouts	Not funded	TBD	$2,000
Eureka: Henderson St from I Street to S Street	LT	X	X	X	X	X	X	Convert to one-way street, install bike facility, bus pullout	Not funded	TBD	$500
Eureka: Myrtle Ave from 5th St to Harrison Ave	LT	X	X	X	X	X	X	Congestion relief, ADA, bike facility	Not funded	TBD	$500
Fortuna: 12th Street – Riverwalk Drive/U.S. 101 South On-ramps, Dinsmore Drive	LT	X	X	X	X		X	Reconfigure intersection to accommodate increased traffic, pedestrian and bike demand	Not Funded	TBD	$1,500

Jurisdiction & 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)
Fortuna: Fortuna Boulevard, Redwood Way to Kenmar Road	ST	X	X	X	X	X	X	Overlay w/ bike lane improvements	Not Funded	2017/18	$2,000
Fortuna: Newburg Road and 12th Street/North bound 101 ramps re-alignment	LT	X	X	X	X		X	Reconfigure intersection to accommodate increased traffic, pedestrian and bike demand	Not Funded	TBD	$1,500
Fortuna: 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	$1,000
Fortuna: Rohnerville Road, Newell St. to Redwood Way	ST	X	X	X	X	X	X	Reconstruct w/ sidewalk and bike lanes	Not Funded	2018/19	$3,000
Fortuna: Rohnerville Road, Redwood Way to Jordan Street	ST	X	X	X	X	X	X	Reconstruct w/sidewalk and bike lanes	STIP	2014/15	$1,041
Fortuna: Ross Hill Road, Kenmar to School Street	ST	X	X	X	X		X	Pedestrian and bike safety improvements	Not Funded	2015/16	$800
Karuk Tribe/Caltrans: SR 96, Orleans	LT	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: SR 96, Tishawniik Hill, Camp Creek Road to Asip Road	LT	X	X	X	X	X	X	Class I trail (detour project) and Class II bikeway	FHWA TTP Safety funds	2015-19	$1,400
Karuk Tribe/County: Red Cap Road, Orleans – *See under County projects*.											
Rio Dell: Ireland Ave., Davis Street to Painter St. and Dixie St., 4th Ave. to Davis Street	ST	X	X	X	X		X	Maintenance paving project, including 2″ overlay and striping, including bikeway signage	Not Funded	2017/18	$19
Rio Dell: Ogle Avenue, River Street to Creek Street	ST	X	X	X	X		X	Road reconstruction and drainage improvements	Not Funded	2015/16	$3,303
Rio Dell: Scenic Way at Eeloa Ave.	ST	X	X	X	X		X	Reconfigure intersection	Not Funded	2023/24	$572
Rio Dell: Wildwood Avenue from Eagle Prairie Bridge to Davis Street	ST	X	X	X		X	X	Add raised center median and stripe bike lanes	State Transp. Enhancement	2013	$589

Jurisdiction & 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)
Rio Dell: Wildwood Avenue, Elko St. to Belleview Ave.	ST	X	X		X	X	X	Class III bike lanes including striping and signage.	Not Funded	2013/14	$35
Trinidad: Van Wycke Street Trail	ST	X	X	X	X		X	Reconstruction, lights	Not Funded	2016/17	$372
										Short-term Subtotal	*$ 105,120*
										Long-term Subtotal	*$ 134,900*
								Regional Projects–Funded (unconstrained) **Subtotal**			$ 78,719
								Regional Projects–Unfunded (constrained) **Subtotal**			$ 161,301
								TOP PRIORITY REGIONAL COMPLETE STREETS PROJECTS TOTAL			**$277,620**

1. Short-term is 0-10 years; long-term is 11-20 years.
2. Assumes an annual 3% rate of 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-7.* 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
Environ-mental 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 and 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 infrastruc-ture 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)	

REFERENCES

CITATIONS

California Department of Transportation (Caltrans) 2010 "Smart Mobility 2010: A Call to Action for the New Decade." (February 2010).

California Transportation Commission (CTC) 2010 *2010 Regional Transportation Plan Guidelines* (Adopted on April 7, 2010.)

Brookings Institute 2012 "Walk This Way: The Economic Promise of Walkable Places in Metropolitan Washington, D.C."

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

County of Humboldt 2008 *Humboldt County General Plan Update—Health Impact Assessment.*

HCAOG 2007 *Humboldt Bay Trail Feasibility Study: Eureka to Arcata.* Prepared for HCAOG by Alta Planning + Design, Planwest Partners, SHN Consulting Engineers & Geologists, Redwood Community Action Agency, and Origer Associates. (June 2007)

HCAOG 2010 *Humboldt County Corridor Preservation Report.* Prepared for HCAOG by Planwest Partners. (May 2010)

Karuk Tribe 2011 *Middle Klamath River Community Transportation Plan.* Prepared for the Karuk Tribe by Lumos & Associates. (November 2011)

Rodale Press 1995 *Pathways for People.* Washington, D.C.

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HCAOG 2003 *Humboldt County Pedestrian Needs Assessment Study.* Prepared for HCAOG by Alta Planning + Design and Redwood Community Action Agency. (June 2003)

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

HCAOG 2008 *Humboldt Regional Bicycle Plan.*

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

HCAOG 2012 *Humboldt Regional Bicycle Master Plan Update 2012.*

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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. 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. The Trails Element does not cover recreational trails if they are not used for transportation.[4] The Trails Element also focuses on regional trails, meaning they link destinations not just within but between communities.

The Trails Element describes Humboldt's existing, planned, and desired regional trails network in the context of a regional transportation system. 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 Trails Element relies specifically on two adopted HCAOG plans:

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

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 Trails 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)

Note that the RTP's "Complete Streets Element" covers sidewalks and bike lanes and routes (Class I, II). For information on recreational trails in Humboldt County, see the *Humboldt County Regional Trails Master Plan* and other plans referenced above.

EXISTING TRAIL SYSTEM

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

[4] For information on recreational trails in Humboldt County, see the referenced plans, particularly the *Humboldt County Regional Trails Master 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" (also the most of any county). Many miles still need to be improved, or even rerouted. For example, some trail segments are on the highway, or the trail detours inland 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: Coastal Conservancy, 2003.

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. In 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 McKinleyville to the Hammond Bridge. The trail is approximately 5.5 miles long. 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 the Tydd Street (near the Eureka Slough) to Herrick Avenue. 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, and the PALCO Marsh trail. The most recent addition is the 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 trail is 1.5 miles long, paved, and winds along the Elk River from Truesdale Avenue to Herrick Avenue at the Pound Road Park-and-Ride. Existing segments of the Waterfront Trail are part of the Pacific Coast Bicycle Route.

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.

GOAL, OBJECTIVES, & POLICIES

GOAL: Humboldt has a network of connected regional and local trails which gives people options 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.

OBJECTIVES: To strive for this goal, HCAOG shall support policies that help achieve the RTP's main objectives/planning priorities (in alphabetical order):[5]

- 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 Trails Element's policies are derived from the goals, objectives, and policies adopted in the *Humboldt County Regional Trails Master Plan* and the *Humboldt County Regional Pedestrian Plan*.

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 in Humboldt County. The regional network shall provide travel options for residents and visitors, including transportation-disadvantages populations. *(Also supports objectives: Balanced Modes Share/Complete Sts*, *Economic Vitality, Environmental Stewardship, Equitable & Sustainable Use of Resources)*

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Policy Trails-2 Maintain the quality and condition of the active transportation system. *(Also supports objective: Preserve Transportation Assets)*

Policy Trails-3 HCAOG shall pursue, and help member entities pursue, active transportation system funding to implement priority trail projects identified in the *Humboldt County Regional Trails Master Plan*. *(Also supports objectives: Balanced Modes Share/Complete Streets*, *Economic Vitality)*

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*)

OBJECTIVE: 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

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

Coastal Trail. HCAOG supports and encourages the design principles that the Coastal Conservancy outlined in "Completing the California Coastal Trail" (2003), which are: proximity to the sea, connectivity, integrity, respect, and feasibility. (*Also supports objectives: Efficient & Viable System, Environmental Stewardship*)

OBJECTIVE: SAFETY

Policy Trails-6 HCAOG supports actions to improve the safety of the regional trails system, which is an integral part of an active transportation 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)

ACTION PLAN: PROPOSED PROJECTS

HCAOG's Action Plan is to carry out the policies of the Trail 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 for developing those plans. The Action Plan projects are multi-use trail projects 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 Trail Projects

Trail Project	Jurisdiction	Description	In HCAOG Adopted Plan(s)*:
Annie and Mary Rail Trail	Arcata, Blue Lake, Blue Lake Rancheria, Humboldt Co.	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, OWP, 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 along the existing Eureka Boardwalk. The segments still to be built and/or upgraded are: Waterfront Drive from C Street to Del Norte Street; PALCO Marsh Trail improvements.	HCCTIS (Priority Project), RTMP
Foster Avenue Extension	Arcata	Sunset Avenue to Alliance Avenue – Class I & II	RBP, RPP, 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
Humboldt Bay Trail	Arcata, Eureka, 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
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	Construct 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.	n.a.

Trail Project	Jurisdiction	Description	In HCAOG Adopted Plan(s)*:
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
Truesdale Vista Point Trail	Eureka	Multipurpose Trail from Truesdale Vista Point to Hilfiker Lane Trailhead	RPP, RTMP

The symbol identifies trails that are or would be part of the California Coastal Trail.

*HCCTIS: *Humboldt County Coastal Trail Implementation Strategy*; OWP: *Overall Work Program*; RBP: *Regional Bicycle Plan*; RPP: *Regional Pedestrian Plan*; RTMP: *Regional Trails Master Plan*.

REFERENCES

CITATIONS

California Coastal Conservancy 2001 *Humboldt Bay Trail Feasibility Study.*

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

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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.

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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)

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. Tribes create and administer their own laws and operate under their own constitutions. 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.

Tribal governments in Humboldt have many of the same transportation priorities and needs as the cities and the County. However, a few important differences distinguish tribes, such as cultural maintenance, prosperous membership, financial security, and infrastructure repair. 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.

The FHWA allocates Tribal Transportation Program funds to Native American Tribes, mostly according to formulas based on population and road miles. For the 2013 fiscal year, the FHWA based tribal shares on the following information:

Tribe Name (California Pacific Region)	Population	Total Miles
Yurok Tribe	10,906	313.7
Wiyot Tribe (Table Bluff)	81	0.4
Karuk Tribe	6,868	12.8
Hoopa Valley Tribe	2,602	359.9
Elk Valley Rancheria	47	0.0
Cher-Ae Heights Indian Community of the Trinidad Rancheria	69	2.1
Blue Lake Rancheria	39	0.2
Big Lagoon Rancheria	22	0.0
Bear River Band of the Rohnerville Rancheria	111	2.6

Source: FHWA "Funding Formula Allocation by Tribe/Region" http://flh.fhwa.dot.gov/programs/ttp/documents/fy13-tribal-shares.pdf, accessed September 2013).

TRIBAL TRANSPORTATION PLANNING

NORTH COAST TRIBAL TRANSPORTATION COMMISSION

The North Coast Tribal Transportation Commission (NCTTC) 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 Smith River Rancheria 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 2010) 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.

Five Humboldt County tribes currently have a representative on the HCAOG Technical Advisory Committee (TAC). The five tribes are: Blue Lake Rancheria, Hoopa Tribe, Karuk Tribe, Trinidad Rancheria, and the Yurok Tribe.

Unfortunately, under the current structure of many federal and state funding programs, tribes cannot be direct recipients of program funds. A tribal project can, however, under many programs, be eligible for funds when another agency–such as a city or county, acts as the project sponsor and administers the project on the tribe's behalf. 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.

In 2013, the HCAOG Board, with input from tribes, the NCTTC, and other interested parties, defined criteria for adding membership to the HCAOG Board. HCAOG and the NCTTC are still discussing the potential of the HCAOG Board expanding to include a seat for an NCTTC representative. Existing Tribal Transportation Systems

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.)

Blue Lake Rancheria's future transportation developments are targeted to 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. SR 96 bisects the Hoopa Valley Reservation and the Trinity River flows through the center.

Highways and Roads System

State Route 96 bisects the Reservation and 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.

Complete Streets Projects

The Hoopa Valley Tribe's comprehensive, long-term transportation goals and plans are outlined in the *Hoopa Valley Indian Reservation Long Range Transportation Plan* (October 2008, prepared by Red Plains Professional, Inc.); the planning horizon extends to the year 2015. Projects funded and under construction in 2013 are:

1. Surface improvements on Redwood Grove Road (BIA Route No.19); and
2. Slide repair mobilizes on Bald Hill Slide sites 2 & 3 (BIA Route No.11).

The following projects are tribal priorities and are recommended for the Hoopa Valley Indian Reservation Transportation Improvement Program (TIP) for the 2013-2015 MAP-21 funding cycle:

1. Downtown Traffic Calming & Safety Enhancement Project (Highway 96, PM 12.38-12.8)
2. Safe Routes to Schools, Pedestrian walkways and Bikeways
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. Bair Ranch Road Emergency Access/Exist Widening Improvements (Humboldt County)
7. Dowd Road Emergency Access/Exist Widening Improvements (BIA Route 18)
8. Hoopa Airport Improvements
9. Baldy Flat Road Improvements
10. Scale Shack Road Improvements
11. Matilton Cutoff Road Guardrails (BIA Route 07)
12. 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 includes a programming allocation for this SR 96 project; however, a funding year has not been determined. 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 *Long Range Transportation Plan*.

1. Tish Tang Road
2. Tsewenaldin Road
3. Hospitality 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 $900,000.

HCAOG priority regional "complete streets" projects in the Hoopa Valley are listed in the Complete Streets Element; see Tables *Streets-5* and *Streets-6* .

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 850 acres of reservation and Trust Land, and an additional 465 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 Constitution of the Karuk Tribe and the authority granted by Title 23, USC Chapter 2, Section 202(d)(5); and, as amended by Section 1119 of the Federal Transportation Legislation MAP-21 ("Moving Ahead for Progress in the 21st Century," enacted in 2012). The TTPPA, and subsequent Referenced Funding Agreements, allocates 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 TTIP's for the Humboldt County community of Orleans, California.

Complete Streets Projects

The following three projects are all located in Orleans, and are identified in the *Humboldt Regional Bicycle Plan Update 2012* (HCAOG, 2012). For funding sources and estimated costs, refer to Tables *Streets-5* and *Streets-6* (see Appendix I).

Red Cap Road Pedestrian and Bikeway Project

The project extends from the intersection of Road Cap Road and State Route (SR) 96 to the intersection of Red Cap Road and Shivshaneen Road. Red Cap Road is the major access route for residents living on Karuk Tribal Land and private properties in the project area. Red Cap Road is currently a narrow two-lane roadway with little to no shoulder. Pedestrians in the area must walk on the roadway or on unimproved shoulders. The narrow roadway, without provisions for pedestrian, bicycle, and other forms of non-motorized transportation, has been deemed inadequate by local residents, Karuk Tribe officials, and County of Humboldt officials.

The goal of this project is to ensure a safe, active transportation route on both sides of Red Cap Road. This project entails utilizing the existing roadway alignment, widening the shoulders of Red Cap Road, and constructing 8,250 linear feet of five-foot-wide paved bikeway/pedestrian-way. Traffic calming elements will be incorporated in the design of this safety project, which could include stripping and signage.

This Project will be constructed within the existing public right-of-way and adjacent to Federal, State, Tribal, and private property. This project is listed in the *Middle Klamath River Community Transportation Plan* (Karuk Tribe, 2011), as well as in the *Humboldt Regional Bicycle Plan*.

Tishawniik Hill Bikeway and Trail

The project extends from the intersection of SR 96 and Camp Creek Road and along SR 96 to the intersection of Asip Road. 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.

State Route 96 Orleans Streetscape & Orleans Dip Improvement Projects

The project extends from the intersection of Asip Road and SR 96 through to the community's centrally located Klamath River Bridge. The goal of this project is to improve mobility and increase safety for motorists, pedestrians and bicyclists travelling along the main community corridor. To meet project goals, context sensitive complete streets elements will be incorporated in the design, such as pedestrian and bicycle facilities, intersection treatments, curbs, sidewalks, striping and signage. The project will be constructed within the existing public right-of-way and adjacent to Federal, Tribal, and private property. This project is identified in the *Middle Klamath River Community Transportation Plan* (Karuk Tribe, 2011).

Public Transit

Presently, the Karuk Tribe provides all new and increased public transit service through the annual FHWA TTPPA formula funding. Starting in fiscal year 2014, the Karuk Tribe will begin receiving Federal Transit Administration (FTA) MAP-21 Tribal Transit Program apportionment funding to assist with the costs of providing transit services.

In 2012, the Karuk Tribe began a contractual agreement with Siskiyou County, California, to provide the first eastbound, rural, fixed-route public transit service available to the community of Orleans. This public transit gives riders access to employment and social opportunities, higher education, and general community services. It also increases mobility choices in the communities of Somes Bar, Happy Camp, and Yreka (Siskiyou County).

Currently, for travel between the communities of Orleans and Weitchpec, KT-NeT (Klamath-Trinity Non-Emergency Transportation) and the Yurok Tribe provide transit services one day weekly.

Orleans residents have identified westbound access as an unmet transit need, and have requested increased westbound transit service. In response, the Karuk Tribe, Yurok Tribe, and KT-NeT have begun negotiations to expand public transit routes to accommodate westbound ridership.

TRINIDAD RANCHERIA

The Trinidad 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 north eastern 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.

Trinidad Rancheria Transportation Projects

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. The Comprehensive Plan includes a Land Use Element, whose purpose is to plan for and shape the future physical development of the Trinidad Rancheria, and preserve and enhance the Rancheria's quality of life. The Land Use Element guides decision-makers including Tribal Council members, Tribal community members, and Rancheria staff in fulfilling the ultimate potential for efficient and sustainable land use within the areas under tribal ownership and management.

Currently, the Trinidad Rancheria is engaged in three major projects pertinent to the Rancheria's long-range planning and development: Trinidad Pier Reconstruction Project, stabilizing and rehabilitating Cher-Ae Lane, and planning for a new U.S. 101 Interchange directly accessing Trinidad Rancheria. Finding solutions to the existing barriers to pedestrian and bicycle travel, safe routes to school, and alternative access to the Rancheria are transportation issues which continue to be priorities of the Tribal Council.

Trinidad Pier Reconstruction Project

The Trinidad Rancheria is in final phase of the Pier Reconstruction Project in the Trinidad harbor. The original pier was built in 1946 and was structurally deficient and found to be hazardous to the environment. The Trinidad Pier is the northernmost oceanfront pier in California. It serves a fleet of commercial fisherman year-round and offers a unique opportunity for visitors to the north coast to observe a working pier and fishing operation. The Rancheria leases the land below the pier (harbor) from the City of Trinidad. Additionally, the Humboldt State University Marine Lab leases space on Trinidad Pier for placement of a pump and associated plumbing for the Telonicher Marine Laboratory.

The purpose of the pier project was to correct the structural deficiencies of the pier and to improve the pier facilities for the public. The pier reconstruction addressed the structural and environmental impacts caused by the aged creosote-treated fir piles. The new pier was built to match the same footprint of the original pier, 540 feet long and varies in width from 24 feet to 26 feet. Additionally, the newly reconstructed pier will improve the water quality conditions and provide additional habitat for the biological community in the area of special biological significance, as identified by the State Water Resources Control Board.

Cher-Ae Lane Slope Stability

Cher-Ae Lane is the main route of access to the Trinidad Rancheria property. This route provides 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

post 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.

U.S. 101 Interchange

The Trinidad Rancheria's long-term goal is the construction of a U.S. 101 interchange that directly accesses the Rancheria. The Rancheria is in the process of writing a plan to address the goal. Current access to the Rancheria is compromised due to the continuous failure of Scenic Drive which is the only access to the Rancheria, its Tribal offices, and the Cher-Ae Heights Casino.

The Rancheria is dedicated to maintaining an inclusive relationship with various stakeholder groups as the planning process unfolds. In 2009 and 2011, the Rancheria held two community charrettes which included multiple days of community involvement that incorporated focus groups, community meetings, and design concepts. The Rancheria looks forward to the public's involvement as the planning process unfolds.

In 2012, Caltrans and the Trinidad Rancheria entered into a Cooperative Agreement for Caltrans to review and ultimately approve a project initiation document. The Rancheria is currently working on the initial planning document of the Project Study Report (PSR), the design exception.

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 Transportation Plan* (updated in 2006) identifies the Tribe's transportation goals and needs, and includes a list of projects for the Tribal Transportation Improvement Program (TTIP). The Yurok Tribe also completed a comprehensive update of Indian Reservation Road Program inventory (IRR). In January, 2013, the Yurok Tribe held a community open house to kick-off its *Yurok Trails and Waterways Master Plan Update.* The major tasks to be completed for finalizing the update include:

- an inventory, mapping, and analysis of existing, historic, and proposed trails and waterways;

- establishing and applying a Yurok trail classification system;
- identifying and prioritizing projects;
- meeting with the Yurok Culture Committee; and
- hosting a second community open house.

Highway and Roads

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.

Yurok High-Priority Road Projects

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.

Bicycle and Pedestrian Facilities

There are currently no bicycle and pedestrian facilities located on the Yurok Reservation. Bicycle and pedestrian routes along US101 and SR 169 are being considered for future planning efforts. The tribe was recently funded by California Coastal Conservancy to begin planning for a coastal pedestrian trail through the Yurok Reservation.

Public Transit

The Yurok Tribe contracts with K-T NeT for transit services to the upper portion of the Yurok Reservation. State, tribal FTA and Indian Reservation Road grants fund the service. The Yurok tribe purchased a 15-22 passenger bus with two wheelchair positions to serve the route from Hoopa to Weitchpec. A second smaller bus will be added to serve the route from Wautec to Weitchpec.

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.

The Wiyot Tribe is a member of the HCTTC, working with other tribes to improve transportation for all. One of the Wiyot Tribe's transportation projects since the last RTP Update was the construction of the Bayview extension, which completed the roads on the reservation proper. Transportation continues to be a high priority item for the Tribe as it looks to the future for its citizens.

Unmet Needs

There are a number of unmet transportation needs. U.S. 101 connects Tribal citizens to destinations within the county. However, flooding at Hookton Road often reroutes drivers to other areas. Additionally, no public transit or paratransit is available on the Reservation; the nearest connection is the RTS (Redwood Transit System) bus stop in Loleta.

REFERENCES

CITATIONS

CTC 2010 (California Transportation Commission) *2010 Regional Transportation Plan Guidelines.* (Adopted on April 7, 2010.)

HCAOG 2012 *Humboldt Regional Bicycle Plan Update 2012*

Karuk Tribe 2011 *Middle Klamath River Community Transportation Plan*

5. PUBLIC TRANSPORTATION ELEMENT

SYSTEM DESCRIPTION

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 complementary paratransit. Local public transit is augmented by social service organizations and non-profits that offer transportation services to eligible populations.

Household 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,

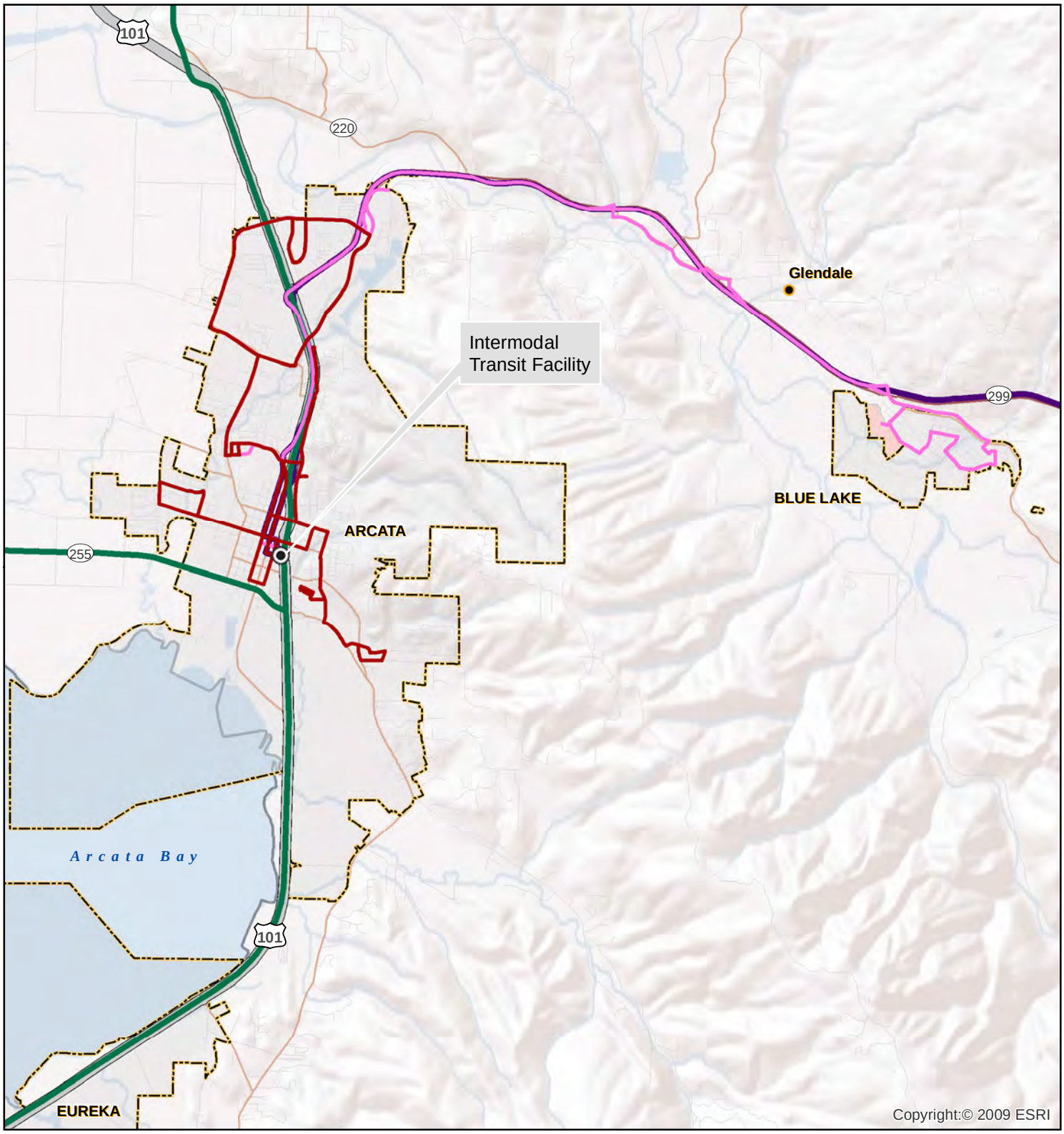
INTERREGIONAL BUS TRANSPORTATION

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 can board a connecting train to Emeryville and then a shuttle bus to 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 the Redwood National Park, Klamath, Orick Post Office, Trinidad Park and Ride, and the Arcata Transit Center.

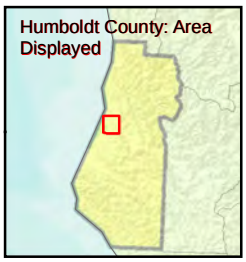
REGIONAL TRANSIT SYSTEM

The various transit bus routes provide a level of connectivity at major transfer points. These locations include downtown Eureka, the Bayshore Mall in Eureka, and the Arcata Transit Center. The Bayshore Mall, as well as the area of 3rd/4th/5th and H Street, provides connections between Redwood Transit System (RTS), South Humboldt Transit System (SHTS), 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 (see Maps Tab) and 5.1b, 5.1c, and 5.1d, below.



Project Source: G:\11905 HumCoAssocGovernments\84410637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F5-1b_Transit_Arcata.mxd

- Blue Lake Rancheria Transit System
- Arcata-Mad River Transit System
- Redwood Transit System
- Redwood Transit System (Extension)
- Amtrak and Greyhound
- Intermodal Transit Facility
- Unincorporated Town
- INCORPORATED CITY
- Native American Reservation/Racheria



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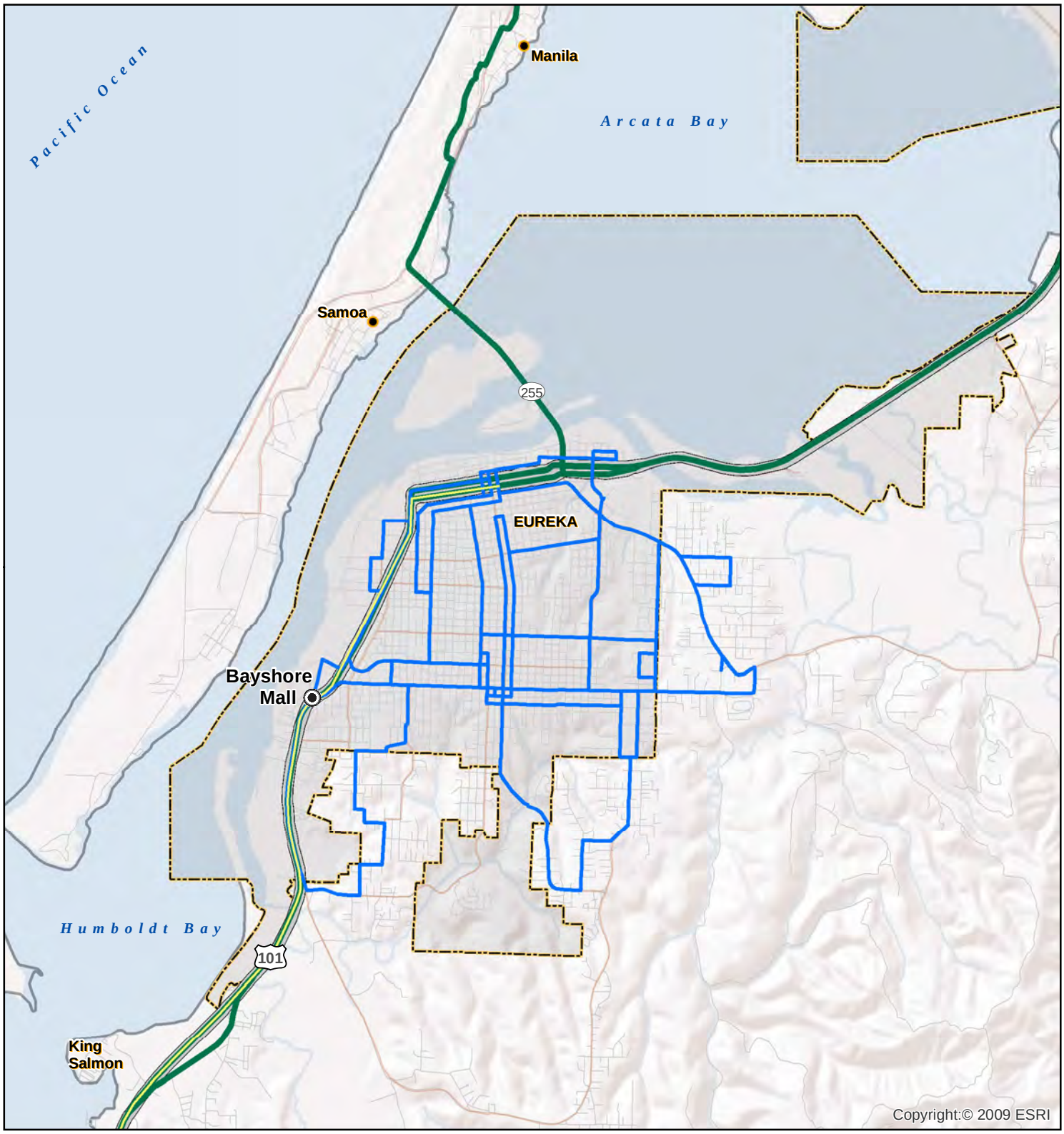
This map is not a Transportation Route Guide
This map is for illustrative and general planning purposes only, and though care has been taken to ensure that the data is accurate, maps and data are provided without warranty of any kind.
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 2/19/2014

Figure 5.1b

Transit Routes: Arcata



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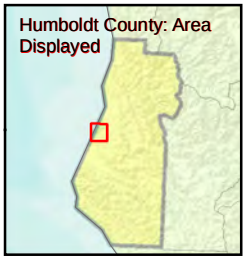
Southern Humboldt Intercity
Eureka Transit Service
Redwood Transit System
Amtrak and Greyhound
Bayshore Mall
Unincorporated Town
INCORPORATED CITY
Major Road
Road (Other)



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Kilometers
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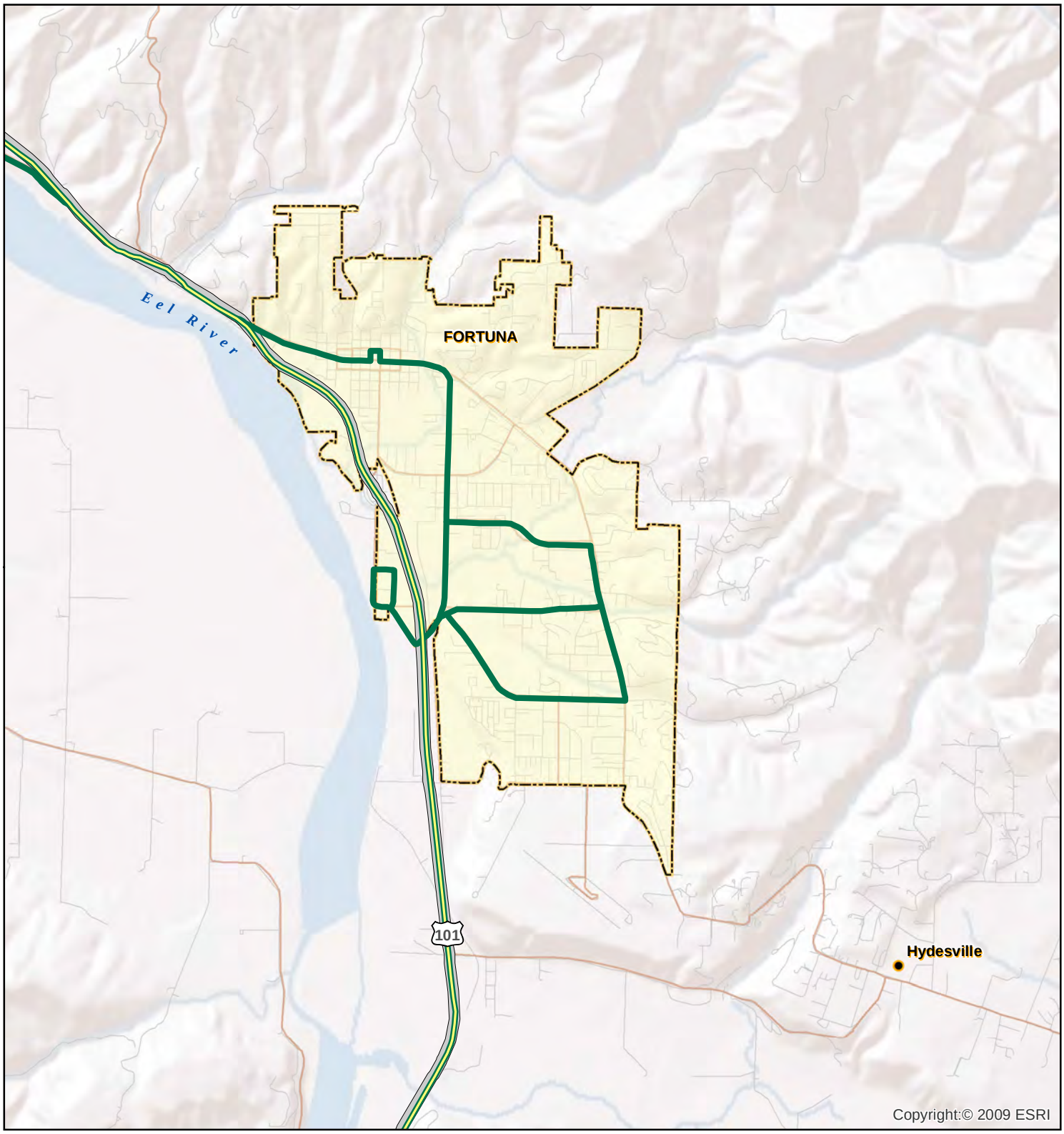
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 2/19/2014

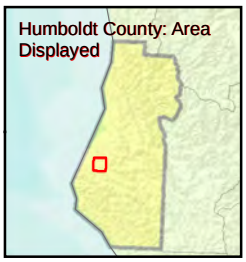
Figure 5.1c

Transit Routes: Eureka



Project Source: G:\11905 HumCoAssocGovernments\84106637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F5-1d_Transit_Fortuna.mxd

Southern Humboldt Intercity
Redwood Transit System
Amtrak and Greyhound
Fortuna Senior Transit Service Area
Unincorporated Town
INCORPORATED CITY
Major Road
Road (Other)



0 1
Kilometers
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Miles
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This map is not a Transportation Route Guide
This map is for illustrative and general planning purposes only, and though care has been taken to ensure that the data is accurate, maps and data are provided without warranty of any kind.
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 2/19/2014

Figure 5.1d

Transit Routes: Fortuna

The RTS commuter bus makes multiple stops in and near Fortuna, allowing potential connections between Fortuna Senior Transit and RTS. The Willow Creek Transit System connects to transit providers in Willow Creek (Klamath-Trinity Non-emergency Transit (KT NeT) and Trinity Transit), enabling trips between Arcata and the Hoopa Reservation and Orleans, Weaverville in Trinity County, and further east to Redding in Shasta County.

PUBLIC TRANSIT SERVICE

Details on regional transit operators (e.g., transit organizations, services areas, fleets, fares, 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);
- *Fiscal Year 2011/12-2015/16 Transit Development Plan Update for Humboldt County Transit Systems* (HCAOG, 2012) (or most current); and
- *Humboldt County Coordinated Public Transit–Human Services Transportation Plan* (HCAOG, 2008).

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 JPA members pay HTA for their respective transit service(s).

HTA operates and maintains the Redwood Transit System (RTS), the Willow Creek Transit Service, and the Southern Humboldt Transit Systems. 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.

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

HTA Member	RTS	Willow Creek	So. Hum Local	So. Hum Intercity	Eureka Transit	Arcata DAR/DAL
County of Humboldt	50.00%	100%	100%	100%	27%	60%
City of Eureka	22.61%				73%	
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%

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

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 Intermodal Transit Center in Arcata (commonly referred to as Arcata Transit Center), Downtown Eureka and the Bayshore Mall. RTS runs seven days a week. (Sunday service began November 4, 2012.)

Southern Humboldt Transit System

HTA operates Southern Humboldt Transit System, which provides intercity and local transit service in the southern portions of the county. The Southern Humboldt Intercity Transit Service runs between Garberville and Eureka with stops including Briceland/Redway Drive, Phillipsville, Miranda, Myers Flat, Weott, Fortuna, and College of the Redwoods. The Southern Humboldt Local Transit System provides deviated fixed-route service in areas between Garberville and Miranda. Service runs during weekday peak travel times (morning and afternoon).

Willow Creek Transit System

HTA also operates the fixed-route Willow Creek Transit System along State Rout 299, between Willow Creek and the Arcata Transit Center. This bus runs weekdays and, since July 2012, 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 runs fixed-route service primarily within the City of Eureka, and also some adjacent areas of the unincorporated County. ETS provides service on weekdays and Saturdays.

Arcata & Mad River Transit System (A&MRTS)

The Arcata City Council initiated A&MRTS in 1975, and operates it through the Public Works Department. A&MRTS provides fixed-route transit service within the Arcata city limits; service runs weekdays and Saturdays. Its hub is the Intermodal Transit Center (commonly referred to as the Arcata Transit Center). A&MRTS contracts HTA to maintain its fleet vehicles.

Blue Lake Rancheria Transit System (BLRTS)

The Blue Lake Rancheria Transit System (BLRTS) began operating in 2002; it 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 has deviated fixed-route service, on weekdays, between Blue Lake/Glendale and the Arcata Transit Center. The fixed-route service provides over 1,300 trips per month. BLRTS also operates a Dial-a-Ride system three days per week and once a month on Saturday.

Currently, the BLRTS vehicle fleet consists of one diesel powered, 20-passenger bus that is lift equipped. Future plans include purchasing one biodiesel-powered transit bus and one biodiesel-powered, 7-9 passenger paratransit van. Through a TTP grant award the Tribe plans to develop a biodiesel production plant. The plant will to manufacture biodiesel fuel utilizing waste oils from commercial kitchens on the Rancheria. By utilizing a greener biodiesel fuel in the BLRTS transit vehicles, greenhouse gas emissions will be reduced by 404 grams per mile or about 85 tons over five years. Fuel and maintenance costs will be reduced by three cents per mile, or approximately $16,000 in savings over five years.

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 provides two fixed-route services between Willow Creek and areas north along Highways 96 and 169, including Hoopa Valley, Weitchpec (since August 2008), and Pecwan/Wautec and Orleans (since early 2009). K-T NeT schedules the Hoopa-Willow Creek service to connect with the Willow Creek Transit System bus (for trips to the Humboldt Bay Area), and with Trinity Transit (for trips further east to Redding).

The Hoopa-Willow Creek service is funded with TDA funds from Humboldt County, stipends from the Hoopa Valley Tribe, and grants. The Hoopa-Orleans service is a cooperative effort between the Yurok Tribe, Karuk Tribe, and K-T NeT; funding comes from an FTA grant to the Yurok Tribe.

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 3/4 mile of all public fixed-route bus service (49 CFR 37.131). Some public transit providers (and towns, cities, and counties) provide a non-ADA paratransit-like service, sometimes called dial-a-ride or dial-a-lift (DAR/DAL) service. Typically, this service is provided to both senior citizens and people with disabilities.

Paratransit services in Humboldt County are operated by HTA, BLRTS, City Ambulance of Eureka, the City of Fortuna, and Humboldt Community Access and Resource Center (HCAR). 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 unincorporated County of Humboldt.

Humboldt Community Access and Resource Center (HCAR)

The Humboldt Community Access and Resource Center (HCAR) serves as the Consolidated Transportation Service Agency (CTSA) for Humboldt County, and in that capacity helps coordinate paratransit services. HCAR's Care-A-Van program is a non-emergency medical transportation service for the greater Humboldt Bay area. This service covers Scotia north to Trinidad and east to Blue Lake in areas that do not have paratransit services. Care-A-Van service is available Monday through Saturday. HCAR also provides Dial-A-Ride (DAR) service Monday through Saturday. Their DAR service area includes Ridgewood, Fields Landing, King Salmon, Elk River Road, and College of the Redwoods.

Fortuna Senior Bus Transit

Fortuna Senior Transit is administered and operated by the City of Fortuna's Parks and Recreation Department. It provides curb-to-curb transportation, Monday through Saturday, within Fortuna City limits.

OTHER TRANSPORTATION PROVIDERS

Community and social service organizations throughout Humboldt County also provide transportation services aside from public transit and paratransit. Most provide dial-a-ride, dial-a-lift, and/or non-emergency medical transportation services. Refer to the "Report of Findings for FY2011-12 Unmet Transit Needs" (HCAOG, 2012, or most current) for brief summaries of these organizations' transportation services:*

- ☐ Adult Day Health Care of Mad River
- ☐ Bridgeville Community Center Van
- ☐ County of Humboldt Health and Human Services
- ☐ Ferndale Senior Resource Center "Bridging the Gap"
- ☐ Fortuna Senior Services, Inc.–Fortuna Senior Bus
- ☐ 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: *FY 2011/12-2015/16 Transit Development Plan for Humboldt County Transit Systems* (HCAOG 2012a), and *Humboldt County Coordinated Public Transit–Human Services Transportation Plan* (HCAOG, 2008).

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.

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

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 A DA 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, building transit-oriented development within major transit corridors, and making it convenient to walk to transit and other destinations. HCAOG will provide information on transit-oriented development, as requested. {California Transportation Plan 2025 Strategy} 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)*

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-6 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-7 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 achieve minimum productivity standards.

Policy PT-8 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}

Policy PT-9 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-10 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-11 Support the transition to alternative fuels for transit fleet.

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-12 HCAOG shall disseminate information on federal and state funding and help eligible agencies apply for funds.

Policy PT-13 HCAOG shall advocate for and support initiatives to increase federal and state transportation funds allocated for public transit services.

Policy PT-14 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)*

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. Annually, HCAOG assesses transit needs through the Unmet Transit Needs (UTN) Process, which includes public meetings at both the local jurisdictional and, by HCAOG, at the RTPA level.

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

– American Public Transportation Association, 2012

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. HCAOG assesses needs in the *Coordinated Public Transit-Human Services Transportation Plan for Humboldt County* (PT-HSTP) (HCAOG 2013). The needs summarized below have been identified by these committees and plans. *The UTN Report of Findings, TDP, and PT-HSTP are incorporated into VROOM by reference.*

TRANSIT SURVEYS & INTERVIEWS

During the update of the TDP the consultants interviewed staff and board members of local transit operators. Discussed most were the strengths and needs of the RTS commuter transit service. Apart from issues specific to the RTS bus, the interviews identified these regional needs:

- Bicycle capacity is regularly exceeded; the highest bicycle loads are in Eureka. Bicycle lockers are needed at outlying bus stops.
- Provide later bus service on Friday and Saturday evenings.

HCAOG conducted transit surveys most recently in 2011 and 2012. The full surveys and results are in the TDP (HCAOG, 2012a) and the UTN Report of Findings (HCAOG, 2011 and 2012b). The results are summarized below.

Table *Transit-2*. 2011 On-board Transit Surveys – Service Improvements Requested

	No. of completed surveys	Increase service frequency	Later weekday service	Later Saturday service	Saturday service	Sunday service	More scheduled stops
RTS	84	17%	12%	18%	--	21%	5%
Willow Creek	11	23%	15%	8%	--	8%	23%
Southern Humboldt Intercity	6	20%	10%	0%	--	20%	10%
Southern Humboldt Local Service	8	24%	6%	24%	--	18%	0%
ETS	32	11%	13%	21%	--	20%	5%
A&MRTS	42	21%	16%	19%	--	24%	5%
Fortuna Senior	54	--	--	--	46%	46%	--
Blue Lake Rancheria	24	28%	28%	5%	--	5%	13%
K-T NeT	25	17%	5%	--	24%	21%	9%

Source: On-board surveys conducted in June-July 2011 as part of preparing the *Transit Development Plan* (HCAOG, 2012a).

Table *Transit-3*. 2011/2012 Unmet Transit Needs Surveys – Service Improvements Requested*

	No. of completed surveys	Increase service frequency	Later weekday service	Later Saturday service	Earlier Saturday service	Sunday service	Earlier weekday service
RTS	94	44%	47%	35%	29%	65%	27%
Blue Lake Rancheria Transit	62	44%	44%	39%	34%	61%	21%
Southern Humboldt Transit	24	33%	42%	33%	33%	79%	21%
A&MRTS	21	62%	48%	62%	38%	76%	38%
ETS	62	44%	44%	39%	34%	61%	21%
Fortuna Senior	9	67%	78%	22%	0%	61%	21%

*Answers for one system exceed 100% because respondents could request more than one improvement.
Source: Surveys filled-out for the 2011/2012 Unmet Transit Needs process (HCAOG, 2011).

2012/2013 Unmet Transit Needs Surveys

In 2012, 583 people filled out surveys. Respondents included transit riders and non-riders, and social service providers. The 2012/13 survey did not track requests by bus system or paratransit service. Overall, the public comments echoed what people have requested in previous years: more frequent service on fixed routes; earlier and later weekday service; later weekend service, and Sunday service. There were also requests for bus service in areas where there currently is none. The "Report of Findings" (HCAOG, 2012b) states,

> Responses from the most recent surveys and public hearings indicate community members would use public transportation more often if it was more frequent, with more scheduled bus routes, and took less time to reach specific destinations.

COORDINATED PUBLIC TRANSIT–HUMAN SERVICES TRANSPORTATION PLAN

The *Humboldt County Coordinated Public Transit–Human Services Transportation Plan* (PT-HSTP) (HCAOG, 2008) also assesses service needs of the regional public transit/paratransit system. The planning process identified service needs by interviewing stakeholders, including the SSTAC, and researching relevant transportation plans and efforts around the county. The stakeholders identified these service gaps and unmet transportation needs:

- 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 schedule-coordination with other providers.
- Additional feeder service to Redwood Transit System.

- Additional senior-specific transportation.
- Enhanced awareness of existing transportation services.
- Improved or new transportation in tribal areas.

Stakeholders (who participated in developing this plan) determined the highest ranked strategies for Humboldt County to be:

- Provide transportation services from remote areas of Southern and Eastern Humboldt County to Eureka.
- Provide dial-a-ride services in rural areas of the county not presently served.
- Provide specialized medical trips (i.e. chemotherapy, dialysis) into Eureka.
- Establish and staff a mobility management program to advance coordination efforts within the county.
- Develop a capital replacement program.

TRANSIT DEVELOPMENT PLAN (TDP) SERVICE RECOMMENDATIONS

The TDP identifies transit system needs relating to:

- Service monitoring and ongoing evaluation;
- Ensuring reliable on-time performance and connectivity;
- Ensuring sufficient capacity to accommodate peak passenger loads; and
- Meeting minimum farebox recovery benchmarks.

The TDP gives service recommendations for the major transit services. Regarding farebox ratios, the TDP identifies the following issue: "Unproductive service can negatively affect farebox recovery, bringing the system- wide farebox ratio below the minimum standard required for TDA." The TDP recommends the following:

Transit Service	Recommendation
HTA, ETS, A&MRTS, BLRTS, K-T NeT	Establish and/or formalize a quarterly system-wide monitoring and evaluation program.
Redwood Transit System	Evaluate potential market for additional Saturday afternoon frequency between the College of the Redwoods and HSU.
Fortuna Senior Bus Transit	HTA and the City of Fortuna conduct an alternatives analysis to assess strategies to maintain Fortuna Senior Bus Transit farebox recovery above the TDA minimum requirement.

For each recommendation, the TDP identifies an "Improvement Strategy" and "Action Required." Refer to the full TDP (HCAOG, 2012a) for details.

Intermodal Transit Center

The Intermodal Transit Facility in Arcata is the only intermodal transit center (ITC) in Humboldt County. The feasibility of building an ITC in Eureka has also been studied (e.g., a study by SHN Consulting Engineers in 1994, and the *Eureka Intermodal Transportation Center Feasibility Study* by LSC Transportation Consultants in 1996). Humboldt Transit Authority identified the need for an ITC in

Eureka in their 2001 *Humboldt Transit Authority Transit Development Plan*. The concept is included in the current TDP (2012) as well.

Park-and-Ride Facilities

The public transit system is not linked to designated park-and-ride facilities region-wide. There is the Trinidad Park & Ride at RTS's bus stop, and there is parking at the Arcata Transit Center. Otherwise, commonly the only parking lots near transit lines are private business/commercial lots. The public transit system would support multi-modal transportation better if there were dedicated park-and-ride facilities along certain transit routes. To be most effective, park-and-ride facilities should include services for cyclists, including bike lockers and/or racks.

Paratransit

Some areas of the county, especially low-density rural areas, are outside of the complementary paratransit and the DAR/DAL service area.

ACTION PLAN: PROPOSED PROJECTS

See Table *Transit*-4, on the following page, for a list of short-term and long-term projects for regional public transportation. 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[2]	Implementation Year(s)	Cost in Year of Expenditure[3] ($000)
Eureka	ST	Bus Replacement (2)	5311/PTMISEA	2013/14	1,000
Eureka	ST	Bus Replacement (2)	Not funded	2016/17	1,090
Eureka DAR/L	ST	Van Replacement (1)	Not funded	2016/17	62
Eureka	LT	Eureka Intermodal Transit Center	Not funded	TBD	14,000
Arcata	ST	Bus replacement (2)	5311/PTMISEA	2014-23	1,200
Arcata	ST	Bus replacement (2)	5311/PTMISEA	2025	1,400
Arcata	LT	Pursue unmet transit needs requests for service to the Arcata Marsh and service on Sundays (annual cost)	Not funded	2023-33	90 annually (x10 years)
Fortuna Senior Bus	ST	Bus replacement	Not funded	2016/17	73
HTA	ST	Bus replacements (one 40' & two 30')	5311/5311 (f)	2013	825
HTA	ST	40' bus replacements (2 to 3 based on fuel type)	5311/PTMISEA	2014	1,300
HTA	ST	40' bus replacements (2)	5311	2014	937
HTA	ST	30' bus replacements (2)	5311	2015	392
HTA	ST	40' bus replacements (2)	5311	2016	965
HTA	ST	40' bus replacements (2)	5311	2022	1,152
HTA	LT	RTS increased frequency & late night service	Not funded	2018	400 annually (x16 years)
HTA	LT	Feeder bus lines to McKinleyville and Fortuna to connect to the RTS commuter line	Not funded	2023-33	538 annually (x10 years)
HTA	LT	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	Bus	5311(f)	2013/14	63.5
K-T NeT	ST	Expand service hours	5311(f)	2013/14	18.5 annually (x 20 years)

Table continues next page

K-T NeT	ST	Intelligent Transportation System application/equipment	5311(f)	2013/14	38
K-T NeT	ST	Relocate bus stop	Not funded	2014-18	50
HCAOG	ST	Park-and-Ride Feasibility Study	RPA	2014/15	10
City Ambulance of Eureka	LT	Expand service hours and to Sundays	Not funded	2023-33	not available, TBD
HCAR	LT	Expand service area for non-emergency medical trips	Not funded	2023-33	not available, TBD
				Short-Term Total	*$10,927.5*
				Long-Term Total	*$27,280 +TBD*
				Regional Projects–Unfunded (unconstrained) **Subtotal**	**$ 28,555 + TBD**
				Regional Projects–Funded (constrained) **Subtotal**	**$ 9,652.5**
				PUBLIC TRANSPORTATION PROJECTS TOTAL	**$ 38,207.5+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] PTMISEA = Public Transportation Modernization, Improvement, and Service Enhancement Account (Prop 1B); RPA = Rural Planning Assistance funding.

[3] Assumes 3% 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	>60,000
	• 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	Fixed route = $2.00
	*• Farebox recovery ratio	Fixed route ≥ 18.8%, paratransit ≥ 5%
	• Operating cost per passenger (boarding)	
	• Operating cost per passenger-mile	
	• Operating cost per service area capita	
	• Operating ratio	
Cost Efficiency	*• Operating cost per vehicle service hour	
	*• Operating cost per vehicle service mile	
	• Operating cost per peak vehicle in service	
	• Vehicle miles (hours) per revenue mile (hour)	
Use & Productivity	• Percentage of capacity used by subscription trips.	< 50% per hour
	*• Passengers per vehicle service hour	
	*• Passengers per vehicle service mile	
	• Passengers per employee FTE	

(*continued on next page*)

Performance Goal	Performance Measure	Standard
	*• Annual total passengers • Annual passenger miles • Average trip length • Annual passengers per service area capita • Ridership per capita (annual) • Ridership by market segment	
Increase In Ridership	*• Projected versus actual ridership. • Increase in ridership correlated to new services or new areas served. • 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 (*from CTP 2025*)	• Average vehicle fleet age • Spare ratio • Local revenue • State revenue • Federal revenue • Operating funding per capita • Operating subsidy per capita • Capital funding per capita	

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

REFERENCES

CITATIONS

American Public Transportation Association 2012 "Facts at a Glance." (www.publictransportation.org/news/facts/Pages/default.aspx, accessed July 2013.)

HCAOG 2008 *Coordinated Public Transit-Human Services Transportation Plan for Humboldt County*. Prepared for HCAOG by Nelson & Nygaard. (October 2008)

HCAOG 2011 *Unmet Transit Needs Report of Findings Fiscal Year 2011/12. (*Adopted August 25, 2011)

HCAOG 2012a *Fiscal Year 2011/12-2015/16 Transit Development Plan for Humboldt County Transit Systems.* (May 2012)

HCAOG 2012b *Report of Findings: FY 2012/13 Unmet Transit Needs.* (Adopted August 16, 2012)

6. AVIATION SYSTEM ELEMENT

Aviation is part of the region's multimodal transportation system. It links to interregional, interstate, and international aviation systems, as well as to freight rail, seaport, and surface (highway) transport. Air freight and air passenger services contribute significantly to the local, state and national economy. Humboldt's aviation system is part of a robust California aviation system which, as the "2010 RTP Guidelines" notes,

> improves mobility, generates tax revenue, saves lives through emergency response medical and firefighting services, annually transports air cargo valued at over $170 billion and annually generates tourist dollars in excess of $14 billion, thereby sustaining our economy and improving our quality of life.

The aviation system serves travel and transport for business, recreation, tourism, freight/goods movement, and medical and emergency needs. General aviation airports serve air couriers, air ambulances, air charter, law enforcement, and private pilots. Our airports are also critical resources that can serve Humboldt's rural and remote communities during natural disasters.

> 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

REGIONAL AVIATION SYSTEM

AIRPORT PLANNING

Six of the region's nine public use airports are owned by the County of Humboldt; they are managed by the Aviation and Airport Division of the Humboldt County Public Works Department. The Samoa Field Airport (formerly called Eureka Municipal Airport) is owned and managed by the City of Eureka. The Hoopa Airport is owned and managed by the Hoopa Valley Tribal Council, located in Hoopa. The Shelter Cove Airport is owned and managed by the Shelter Cove Resort Improvement District #1, located in Whitethorn.

Airports must be operated consistent with the policies of the region-wide Airport Land Use Compatibility Plan (ALUCP), which is adopted and applied by the Airport Land Use Commission (ALUC). Each of the County-owned airports, additionally, 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.)

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.) An ALUC is a single-purpose entity that oversees the compatibility of land uses surrounding 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 AAC and the ALUC, 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 (per CPUC §21676(a)).

Airport Land Use Compatibility Plan

> "Incompatible land uses around airports are considered the largest imminent and continuous threat to California aviation..."
>
> – California Aviation System Plan, 2011

Acting under its authority as the ALUC, the County Board of Supervisors adopted the *Airport Land Use Compatibility Plan: Humboldt County Airports* (prepared in March, 1993; amended and adopted in 1998) (County of Humboldt, 1998). The *Airport Land Use Compatibility Plan* (ALUCP) sets policies and criteria for assessing the land use compatibility between Humboldt's public use airports and proposed development in surrounding areas. The compatibility criteria set standards for building heights, building construction, and restricted uses of land. The plan's review policies and compatibility criteria apply broadly to all airports in the County. Additionally, the plan has specific policies, compatibility maps, and background data for the five County-operated airports plus Shelter Cove Airport. Although the ALUCP has policies and criteria that regulate allowed uses and residential densities around the Hoopa Airport, it does not contain specific policies or compatibility zones for the Hoopa Airport or the Samoa Field Airport (formerly Eureka Municipal Airport).

AIRPORT FACILITIES

Humboldt County has nine public use airports (Figure 7.1, see Maps Tab). Six are owned and operated by the County of Humboldt, including the California Redwood Coast–Humboldt County Airport (formerly the Arcata-Eureka Airport),[6] the only one with commercial passenger service. The other three are owned and operated by the City of Eureka, the Hoopa Tribe, and Shelter Cove Resort Improvement District #1. Table *Aviation-1* describes airport facilities and services. Table *Aviation-2* shows the "Airport Enhancement Needs to Upgrade to Minimum Standards," for airports located in Caltrans District 1.

> "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

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

The California Redwood Coast–Humboldt County Airport (Redwood Coast 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, and 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).

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). Private (commercial) shuttle and taxicab companies and local hotels also provide ground transport.

Dinsmore Airport

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

[6] The County of Humboldt has applied to the FAA to rename the airport and expects it to be approved in 2014.

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 in daytimes only.

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

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

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

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 immediately 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.

Table *Avaiation-1.* 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 12/31/2011	Number of Runways	Longest Runway (ft.)	Surface	Lighted	Approach Visibility[3]	Control Tower, Airline Service, AvGas, Jet Fuel, Maintenance, Automobile Rentals, Food
033	Samoa Field (formerly called Eureka Municipal)	City of Eureka	Eureka	13 SW	11	48/wk	1	2,700	Asphalt	No	Vis	n/a
021	Hoopa	Hoopa Tribe	Hoopa	20 E	1	20/wk	1	2,325	Asphalt	No	Vis	n/a
0Q5	Shelter Cove	Resort Improvement District #1	Shelter Cove	56 S	0	42/d	1	3,400	Asphalt	No	Vis	Food
(K)ACV	Redwood Coast (formerly called Arcata-Eureka)	County	McKinleyville	–	11	132/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	1	2,510	Asphalt	No	Vis	n/a
016	Garberville	County	Garberville	55 S	19	45/d	1	3,045	Asphalt	No	Vis	AvGas
019	Kneeland	County	Kneeland	17 SE	1	27/d	1	2,240	Asphalt	No	Vis	n/a
(K)EKA	Murray Field	County	Eureka	11 S	54	179/d	2	3,010	Asphalt	Yes	NP	AvGas, maintenance, food
(K)FOT	Rohnerville	County	Fortuna	25 S	11	95/d	1	4,025	Asphalt	Yes	NP	AvGas, maintenance

[1] Distance (in nautical miles) and direction from Redwood Coast Airport.
[2] "FAA Information Effective 17 October 2013" (www.airnav.com/airports, accessed December 11, 2013).
[3] Statute mile. [Precision; Visual; Non-Precision].
[4] Including Air Taxi
Source: "Arcata-Eureka Airport Master Plan Report" (September 2005)

Murray Field Airport

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

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.

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.

Samoa Field Airport

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 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/Whitethorn). 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.

GOAL, OBJECTIVES, & POLICIES

These policies set how HCAOG will work to achieve its goal and objectives for the region's aviation system. HCAOG sets these policies to support the State's goal of building "a strong multimodal transportation system by providing plans for aviation, addressing aircraft noise mitigation and ground access congestion concerns, and avoiding encroachment from incompatible land uses" (RTP Guidelines).

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):[7]

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

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

OBJECTIVE: BALANCED MODE SHARE/COMPLETE STREETS

Specific Aviation Objective:

- *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 other modes.*

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 and encourage 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 supports applying Complete Streets strategies to airport access road improvements for regional projects included in the RTP, as well as and local projects in jurisdictions' Capital Improvement Programs.

Policy AS-4 HCAOG shall have an adopted Airport Ground Access Improvement Program (AGAIP) for the Redwood Coast Airport, the primary air carrier airport within HCAOG's jurisdiction. The program shall consider feasible projects to develop or extend highways, bikeways, 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 (per California Government Code §65081.1(a)).

OBJECTIVE: ECONOMIC VITALITY

Specific Aviation Objective:

- *Support actions to improve the regional aviation system's capacity to expand the economic benefits of airfreight and enhance local and regional commerce and tourism.*

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

OBJECTIVE: EFFICIENT & VIABLE TRANSPORTATION SYSTEM

Policy AS-6 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.

OBJECTIVE: ENVIRONMENTAL STEWARDSHIP

Specific Aviation Objective:

- *Reduce air pollutant emissions and air quality impacts of the regional goods movement system.*

Policy AS-7 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

Specific Aviation Objectives:

- *Reduce aircraft noise, ground access congestion, and encroachment concerns resulting from conflicts between incompatible land uses and airport space.*
- *Maximize the utility and potential of regional air freight and passenger airline services with adjacent land uses.*

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: SAFETY

Specific Aviation Objective:

- *Provide support and coordination for the continued operation of safe and efficient aviation services and facilities in Humboldt County.*

Policy AS-9 Support the ALUC and airport operators in identifying, avoiding, and eliminating activities which introduce potential aviation safety, 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 tables *Aviation*-2 and *Aviation*-3 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.

The following summarizes what the regional airports need in order to accommodate existing and forecasted demand for aviation services. There are needs for both airport planning and upgrading or expanding facilities. Table *Aviation-4* shows what local airports need in order to meet minimum standards for their airport classification.

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.

Redwood Coast Airport: Airport Ground Access Improvement Program

The Redwood Coast Airport is a primary air carrier airport because it has annual enplanements over 10,000. In 2011, there were 70,455 enplanements, down 25% from 2010 (93,402), and down 31% from 2009 (102,440). In 2012 there were 61,705 enplanements, down 12.42% (FAA 2012a, 2012b, 2013). Primary air carrier airports are required to have an Airport Ground Access Improvement Program, 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)). Developing and adopting an Airport Ground Access Improvement Program for the Redwood Coast Airport is required.

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.

Table *Aviation-2*. Aviation Activity Forecast–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-3*. Aviation Activity Forecast–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
Itinerant	Air Taxi		4,650	5,600	6,450	7,300
Itinerant	General Aviation		9,700	9,800	9,950	10,100
Itinerant	Dedicated Air Cargo		1,250	1,400	1,625	1,850
Itinerant		*Subtotal*	*27,250*	*28,500*	*29,700*	*30,900*
Local	General Aviation		7,700	7,800	7,950	81,00
Local	Military / Government		15,000	15,000	15,000	15,000
Local	Dedicated Air Cargo		550	700	800	900
Local		*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
Itinerant	Single-Engine Variable		2,000	2,000	2,000	2,000
Itinerant		*Subtotal*	*5,000*	*5,000*	*5,300*	*5,300*
Local	Single-Engine Turboprop		50	50	100	100
Local	Helicopters		500	500	500	500
Local	Light Twin-Engine		50	50	100	100
Local	Single-Engine Fixed		500	500	800	800
Local	Single-Engine Variable		400	400	700	700
Local		*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
Itinerant	General Aviation		21,360	22,560	23,830	25,170
Itinerant	Military / Government		320	340	360	380
Itinerant		*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.

	Operation Type[1]		Annual Operations Forecast[2] 2010	2015	2020	2025
	Rohnerville Airport					
Itinerant	General Aviation		11,360	12,020	12,710	13,450
Itinerant	Military / Government		390	390	390	390
Itinerant		*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.

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. From 2005 to 2013, however, the airport's based aircraft actually decreased from 20 to 19 (FAA, May 2, 2013).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

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 (Kneeland Master Plan, 2005).

Murray Field Airport: Preserve Land for Expansion

Murray Field Airport's priority needs are to construct the runway/taxiway and to install wildlife fencing; these projects are planned for 2014-2016. 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: Facility Needs

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

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-4* for details.

Table *Aviation-4.* 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. Std. Length[2] (Feet)	Length (Feet)	Extension Cost Estimate	Width (feet)	Widening Cost Estimate	Pavement Condition	PCI[3]	PCI Report Year	Weight Bearing Capacity[4] (in 1000s)	Runway Safety Area[5]
Primary Commercial Service Non-Hub				**150**		**Good**	**Very Good**		**50K SW**	
REDWOOD COAST (formerly Arcata)	7,000	5,998	$1,107,711	150		ASPH-G	79	2006	60,000	S
Regional General Aviation				**75**		**Good**	**Very Good**		**12,500**	
MURRAY FIELD*	5,500	3,000	$1,381,875	75		ASPH-F	99	2006	19,000	
ROHNERVILLE*	5,600	4,005	$1,175,515	100		ASPH-G	76	2006	30,000	
Community General Aviation				**75**		**Fair**	**Very Good**		**12,500**	
SAMOA FIELD (formerly Eureka Municipal)	3,500	2,700	$353,760	60	$386,925	ASPH-F	91	2005	10,000	
GARBERVILLE	3,700	3,050	$359,288	75		ASPH-F	73	2005	30,000	
KNEELAND*	4,500	2,270	Infeasible-terrain	50	$829,125	ASPH-P	95	2006	13,000	U
SHELTER COVE	3,500	3,400	$55,275	75		ASPH-F	98	2005	20,000	
Limited Use				**60**		**Fair**	**Very Good**		**12,500**	
DINSMORE	3,800	2,510	$456,350	48	$336,072	Excellent	32	2006	reg. cap.	
HOOPA	3,100	2,325	$285,588	50	$228,470	ASPH-F	reg. cap.	1995	10,000	
Cost Totals for Runway Attributes			**$5,175,362**		**$1,006,742**					

Table continues on next page.

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	$100,000	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	$100,000	None	$100,000	1/1/1984
GARBERVILLE	None	$60,000	None	Yes		100LL		7/16/2010
KNEELAND*	None	$60,000	None	None	$100,000	None	$100,000	5/1/1993
SHELTER COVE	None	$60,000	None	None	$100,000	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 for Other Safety Attributes		**$240,000**			**$400,000**		**$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: "General Aviation System Needs Assessment 2012" (Caltrans, 2012).

ACTION PLAN: PROPOSED PROJECTS

The proposed projects in Table *Aviation-5* address airports' current needs 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 2014-2023,* and communications with local agency staff.

Table *Aviation-5.* Regional Airport Capital Improvement Plan (CIP) Projects

Lead Agency	Project Name/Description	Short or Long Term[1]	Funding Source	Implementation Year(s)	Estimated Cost[2] (000s)
Redwood Coast Airport					
County of Humboldt	RSA Environmental mitigation – bluff stabilization	ST	FAA, County of Humboldt	2013	$117
County of Humboldt	Phase 2 ARFF site civil work, remove nose hangar	ST	FAA, County of Humboldt	2013	$2,370
County of Humboldt	Phase 3 ARFF design completion	ST	FAA, County of Humboldt	2014	$399
County of Humboldt	Redwood Coast Airport ALP update	ST	FAA, County of Humboldt	2014	$83
County of Humboldt	Phase 4 ARFFF –Construct ARFF building	ST	FAA, County of Humboldt	2016	$5,080
County of Humboldt	*Phase 3 construct fire station	ST	FAA, County of Humboldt	2016	$3,700
County of Humboldt	Design runway lighting improvements	ST	FAA, County of Humboldt	2017	$375
County of Humboldt	Construct runway lighting improvements	ST	FAA, County of Humboldt	2018	$3,900
County of Humboldt	Study hazard removal	ST	FAA, County of Humboldt	2018	$150
County of Humboldt	*RNR TWY B&G/drainage (design complete 2006)	ST	FAA, County of Humboldt	2019	$509
County of Humboldt	Design roadway entrance to airport	ST	FAA, County of Humboldt	2019	$250
					Subtotal $13,233
Dinsmore Airport					
County of Humboldt	Study removing or lowering hazards to aircraft	ST	FAA, County of Humboldt	2015	$50
County of Humboldt	Remove/lower hazard to aircraft	ST	FAA, County of Humboldt	2015	$150
County of Humboldt	Design west end storm drain improvements	ST	FAA, County of Humboldt	2016	$50
County of Humboldt	Install fence and gates	ST	FAA, County of Humboldt	2016	$40
County of Humboldt	*Design windsock and segmented circle	ST	FAA, County of Humboldt	2016	$42
County of Humboldt	Construct windsock and segmented circle	ST	FAA, County of Humboldt	2017	$88
County of Humboldt	*Construct west end storm drain improvements	ST	FAA, County of Humboldt	2018	$300
County of Humboldt	*Construct fence and gates	ST	FAA, County of Humboldt	2019	$166

Table continues on next page.

Lead Agency	Project Name/Description	Short or Long Term[1]	Funding Source	Implementation Year(s)	Estimated Cost[2] (000s)
County of Humboldt	Design ramp improvements	ST	FAA, County of Humboldt	2019	$50
					Subtotal $936
Garberville Airport					
County of Humboldt	*Design runway	ST	FAA, County of Humboldt	2014	$53
County of Humboldt	*Construct runway RNR	ST	FAA, County of Humboldt	2015	$368
County of Humboldt	*Construct ramp RNR and expansion	ST	FAA, County of Humboldt	2016	$573
County of Humboldt	Study removing or lowering hazards to aircraft	ST	FAA, County of Humboldt	2017	$50
County of Humboldt	*Remove or lower hazards to aircraft	ST	FAA, County of Humboldt	2018	$100
County of Humboldt	*Design runway safety area drainage	ST	FAA, County of Humboldt	2018	$7
County of Humboldt	*Construct runway safety area drainage	ST	FAA, County of Humboldt	2019	$564
					Subtotal $1,714
Kneeland Airport					
County of Humboldt	RSA study	ST	FAA, County of Humboldt	2015	$157
County of Humboldt	*Study removing or lowering hazards to aircraft	ST	FAA, County of Humboldt	2015	$5
County of Humboldt	Remove or lower hazards to aircrafts	ST	FAA, County of Humboldt	2016	$150
County of Humboldt	*Design stabilization	ST	FAA, County of Humboldt	2016	$108
County of Humboldt	*Construct stabilization	ST	FAA, County of Humboldt	2017	$1,078
County of Humboldt	*Design fencing and gates	ST	FAA, County of Humboldt	2018	$45
County of Humboldt	*Construct fencing and gates	ST	FAA, County of Humboldt	2019	$350
					Subtotal $1,892
Murray Field Airport					
County of Humboldt	Construct wildlife perimeter fencing/gates	ST	FAA, County of Humboldt	2013	$609
County of Humboldt	ALP update	ST	FAA, County of Humboldt	2014	$83
County of Humboldt	Design lighting upgrade for runway and taxiway	ST	FAA, County of Humboldt	2015	$50
County of Humboldt	Design AWOS system	ST	FAA, County of Humboldt	2015	$25
County of Humboldt	Design beacon security lighting, and emergency generator connection	ST	FAA, County of Humboldt	2015	$25
County of Humboldt	*Construct upgrade of RWY/TWY lighting system	ST	FAA, County of Humboldt	2016	$250
County of Humboldt	*Install and implement AWOS type system	ST	FAA, County of Humboldt	2016	$270
County of Humboldt	Beacon, security lighting, and emergency generator connection	ST	FAA, County of Humboldt	2017	$100
County of Humboldt	*Design RWY/TWY RNR	ST	FAA, County of Humboldt	2017	$63
County of Humboldt	*Construct RWY/TWY RNR	ST	FAA, County of Humboldt	2018	$753

Table continues on next page.

Lead Agency	Project Name/Description	Short or Long Term[1]	Funding Source	Implementation Year(s)	Estimated Cost[2] (000s)
County of Humboldt	*Design entry road rehabilitation	ST	FAA, County of Humboldt	2018	$40
County of Humboldt	*Construct entry road rehabilitation	ST	FAA, County of Humboldt	2019	$480
					Subtotal $ 2,538
Rohnerville Airport					
County of Humboldt	*Construct ramp RNR (design in 2009-10)	ST	FAA, County of Humboldt	2015	$660
County of Humboldt	*Construct RWY/TWY RNR (design in 2006)	ST	FAA, County of Humboldt	2016	$933
County of Humboldt	Design completion of wildlife exclusion fence/gates	ST	FAA, County of Humboldt	2017	$180
County of Humboldt	Construct completion of wildlife exclusion fence/gates	ST	FAA, County of Humboldt	2018	$609
County of Humboldt	Design and construct Phase II ramp improvements	ST	FAA, County of Humboldt	2019	$156
					Subtotal $2,538
Samoa Field (Formerly Eureka Municipal)					
City of Eureka	Remove/lower hazard to aircraft	ST	Caltrans/City of Eureka	2014	$30
City of Eureka	Design T-hangars	ST	City of Eureka	2014	$20
City of Eureka	Construct T-hangars	ST	City of Eureka	2015	$240
City of Eureka	Resurface runway/taxiways/repaint markings	ST	Caltrans/City of Eureka	2019	$160
City of Eureka	Construct wildlife exclusion fence/gates	ST	Caltrans/City of Eureka	2021	$240
					Subtotal $690
Airport Land Use Commission					
County of Humboldt	Update the *Airport Land Use Compatibility Plan: Humboldt County Airports*	ST	Caltrans Div. of Aeronautics' A&D Program (potential), County of Humboldt	TBD	$TBD
Hoopa Airport, Shelter Cove Airport — No information available.					
				Short-term Subtotal	*$15,303*
				Long-term Subtotal	*$0*
				Regional Projects–Funded (constrained) **Subtotal**	TBD
				Regional Projects–Not funded (unconstrained) **Subtotal**	TBD
				REGIONAL AVIATION PROJECTS TOTAL	**$15,303**

[1] Short-term is 0-10 years; long-term is 11-20 years. [2] To estimate the cost in year of implementation, assume a 3% annual rate of inflation.

* Project is listed in the "California Aviation System Plan: Capital Improvement Plan Year 2014-2023" (Caltrans, August 2013).

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-6.* 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. • 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. • 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 per capita?	• Total transportation CO_2 per capita. • Passenger transportation CO_2 per capita.	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 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?	

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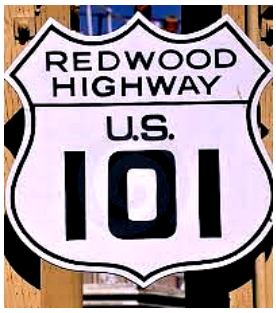
7. GOODS MOVEMENT ELEMENT

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



The most efficient systems for transporting freight maximize land, sea, and air transport by connecting highway, rail, port and aviation facilities. Through an intermodal transportation system, shippers and receivers have more efficient access to inter-regional, national, and international markets. It is efficient to move large quantities, especially heavy bulk products such as sand, gravel, cement, and timber, via port-rail connections. Trucks 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

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). U.S. Highway 101, except for a five-mile stretch from the Humboldt/Mendocino County line to Richardson Grove State Park, is the only Terminal Access Route in Humboldt County. Therefore, it is the only route that allows STAA trucks.

Terminal Access Route symbol

Unlike STAA trucks, California Legal Trucks have access to the entire state highway system. In short, STAA trucks can be longer than "California Legal" trucks. Since STAA trucks have become the national standard, communities without STAA access can be at an economic disadvantage. Truck freight must be unloaded and transferred from STAA trucks to shorter trucks, making goods movement more expensive for those communities.

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).

More restrictive are California Legal Advisory Routes, which advise that trucks should have semi-trailers shorter than the 40 feet maximum kingpin-to-rear-axle (KPRA) distance 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). Caltrans faced legal challenges on the project's CEQA and NEPA environmental reviews. Caltrans prevailed in the CEQA case (2012), and was ordered to prepare new tree maps in the NEPA case ruling. Caltrans hopes to begin project construction in 2014. If/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.

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).

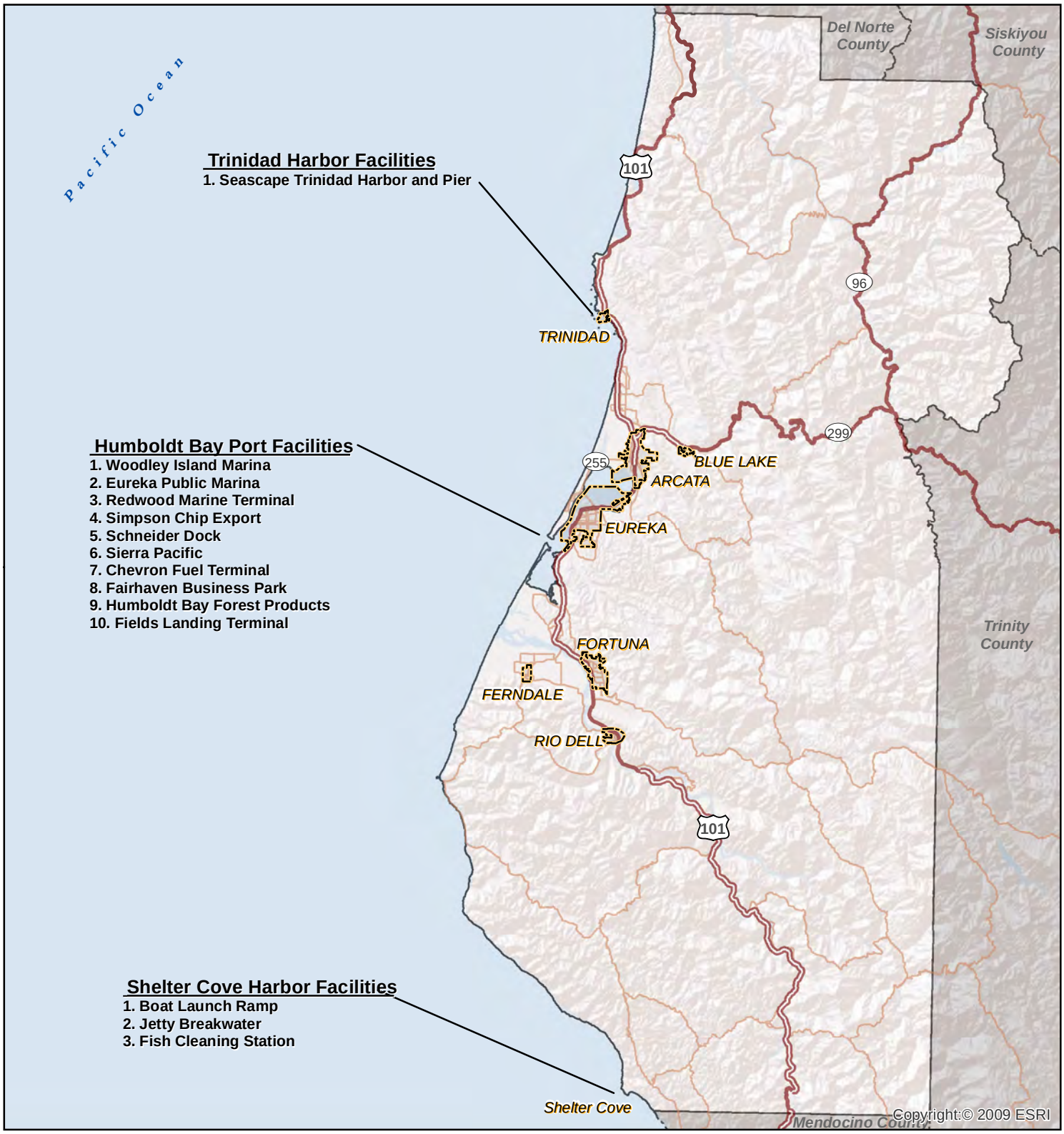
MARITIME TRANSPORT

The Port of Humboldt Bay is the only deepwater 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 ocean-going vessels with domestic or international cargoes, including Panama Canal-class (Panamax) vessels. However, the Port of Humboldt Bay is currently the major underutilized deepwater harbor in the State of California. The Port's major international trading partners are Canada, China, and Pacific Rim countries (Caltrans 2012). Since the railroad is not in service, cargo loads from commercial vessels calling on Humboldt Bay are transported to and from the harbor by truck. Figure 7.2a and 7.2b show harbor/marine facilities.

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 county-wide public local agency, manages Humboldt Bay to promote commerce, navigation, fisheries, recreation, and to protect natural resources. The Harbor District owns Kramer Dock and Redwood Marine Terminal on the Samoa Peninsula, and also owns and operates Woodley Island Marina facility, which has 237 berths, a restaurant, and office facilities.



Project Source: G:\11905 HumCoAssocGovernments\84410637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F7-2a_Harbor_Overview.mxd

INCORPORATED CITY
Freeway
Highway
Major Road

0 10
Kilometers
0 10
Miles

N

This map is not a Transportation Route Guide
This map is for illustrative and general planning purposes only, and though care has been taken to ensure that the data is accurate, maps and data are provided without warranty of any kind.
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 2/19/2014

Figure 7.2a

Harbor/Marine Facilities: Overview

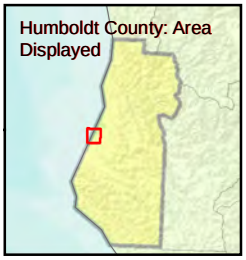
Project Source: G:\11905 HumCoAssocGovernments\84410637 HCAOG RTP GIS Mapping\08-GIS\Maps\Figures\F7-2b_Harbor_Detail.mxd

- Port Facility
- INCORPORATED CITY

Shipping Channel Depth

- 47ft
- 41ft - 44ft
- 33ft

- Freeway
- Highway
- Major Road
- Road (Other)



0 1 Kilometers

0 1 Miles

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This map is not a Transportation Route Guide
This map is for illustrative and general planning purposes only, and though care has been taken to ensure that the data is accurate, maps and data are provided without warranty of any kind.
Data source: HCAOG; Humboldt County GIS; ESRI.
Map created by: amshows

Date: 2/19/2014

Figure 7.2b

Harbor/Marine Facilities: Detail

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 eight operating docks and nine deepwater berths. All docks serve ocean-going dry cargo vessels and one dock also serves liquid bulk cargo vessels. The following docks and terminals have active cargo terminals:

- Samoa Pacific Pulp Mill Dock (berth 2 at Redwood Marine Terminal)
- Redwood Dock Site; Phillips Petroleum (formerly Tosco)
- Dock B/Balloon Track (a Foreign Trade Zone)
- Fields Landing Terminal Area (a Foreign Trade Zone)
- Simpson-Samoa (Redwood Dock site)
- Humboldt Bay Forest Products (Olson Dock)
- Fields Landing Terminal (formerly named Kramer dock; ship repair only)

Table *Goods-1* gives more information on active shipping terminals serving Humboldt Bay.

Table *Goods-1*. Active Shipping Terminals Serving Humboldt Bay

Location	Shipping Terminal	Ownership	Primary Use
SAMOA PENINSULA	1. Redwood Marine Terminal (Docks 1 & 2)	HBHRCD* (publicly owned)	By mill operators, fishing vessels, cruise boat
	2. Simpson Samoa Chip Export Dock	California Redwood Company & Simpson Lumber Company	Bulk woodchips
	3. Fairhaven (Terminal) Business Park	Security National Properties (privately owned)	Logs, cruise boat
EUREKA WATER-FRONT	4. Schneider Dock	Dave Schneider	Multi-purpose utility dock; intermittent berthing of non-cargo vessels, including Coast Guard, cruise boat and marine environmental/safety
	5. Eureka Forest Products Eureka Dock/Preston Properties	Sierra Pacific Industries (privately owned)	Multi-purpose forest products dock; inbound log barges, outbound woodchip barges, occasional inbound lumbar barges
	6. Chevron Terminal	Samoa Pacific Pulp Mill Dock (berth 2 at Redwood Marine Terminal)	Bulk refined petroleum products; dedicated to ocean barge every 7 to 8 days

*HBHRCD = Humboldt Bay Harbor Recreation and Conservation District. Sources: HBHRCD 2003, Wilson 2013.

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.

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.

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 the waterborne commerce.	HBHRCD
Site #3(A) Humboldt Bay Forest Products (Olson Dock) (Murphy)	62-acre site in Fields Landing.	Mr. Stanwood Murphy
Site #3(B) Fields Landing Terminal (Formerly Kramer Dock)	19-acre site in Fields Landing, south of Site #3(A).	HBHRCD
Site #4 Redwood Coast Airport	50 acres of activated F.T.Z. area (within a 247-acre site) at the Redwood Coast Airport.	County of Humboldt

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).

> ...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*

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)).

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. Six airports are owned by the County of Humboldt; all County airports are managed by the Aviation and Airport Division of the County Public Works Department:

- Redwood Coast Airport (located in McKinleyville)
- 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 one commercial airline, United Express (a subsidiary of United Airlines), which offers flights to San Francisco and Sacramento. The number of passenger boarding (i.e., enplanements) at the Redwood Coast Airport declined in the last years for which data is available: there were 102,440 enplanements in 2009; 93,402 in 2010 (-9%); and 70,455 in 2011 (-25%) (FAA 2012b). 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 over 10 years.

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 meant to also advance the State of California's adopted "Statewide Goods Movement Strategy," which sets a blueprint for improving the statewide goods-movement transportation system. This strategy focuses on making the *existing* system more efficient, through technology and other means. The goal is to maximize capacity and reliability and minimize long-term costs. HCAOG has the same goal for the regional good-movement system.

> **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.[8] The objectives support and work in tandem with one another. Thus, a policy can help meet more than one objective.

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 use of transportation corridors within the region.*
- *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 (Road/Trucking)
HCAOG prioritizes projects to design and maintain truck routes consistent with Complete Streets goals whenever safe and feasible.

Policy GM-4 (Rail)HCAOG supports NCRA efforts to include their Humboldt County lines in the California State Rail Plan in order to be eligible for federal rehabilitation and new facility construction funds.

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

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

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.*

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)*

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.*

Policy GM-9 (Goods Movement) HCAOG shall promote projects and programs that increase energy efficiency, conserve energy, and use alternative ("clean") energy sources to reduce the direct and indirect costs of freight and passenger transportation.
(Also supports objectives: Economic Vitality, Efficient & Viable Transportation System, Environmental Stewardship)

Policy GM-10 (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). *(Also supports objective: Environmental Stewardship)*

OBJECTIVE: EQUITABLE & SUSTAINABLE USE OF RESOURCES

Specific Goods Movement Objectives:

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

Policy GM-11 (Goods Movement) HCAOG shall work to identify environmental, community, and land use impacts of goods movement activities early in the planning and project development process and shall have projects include resources to help mitigate these impacts. {California Transportation Plan 2025 Strategy} (*Also supports objective: Environmental Stewardship)*

Policy GM-12 (Maritime)HCAOG will assist local, regional, or state lead agencies in preserving coastal-dependent land uses as necessary for successfully operating the regional maritime transport system.

OBJECTIVE: SAFETY

Specific Goods Movement Objective:

- *Reduce the regional goods movement transportation system's number of accidents and unsafe conditions.*

Policy GM-13 (Goods Movement) HCAOG shall support implementing cost-effective technologies and operational strategies (including Intelligent Transportation Systems (ITS) to improve safety, expedite goods movement, and minimize emissions and congestion related to goods movement transportation. {California Transportation Plan 2025 Strategy} *(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.

Buckhorn Grade Improvement Project

Caltrans Districts 1 and 2, in partnership with Shasta, Trinity, and Humboldt Counties, propose to improve the Buckhorn Grade portion of State Route 299. The project proposes to improve the safety and efficiency of 9.6 miles of SR 299 in Trinity and Shasta Counties. Several projects are currently proposed or are being constructed, all within Shasta County (Caltrans 2009).

Caltrans has considered approximately $120 million in Buckhorn Summit improvements in Shasta County that would remove the Advisory Route restrictions and allow California legal truck lengths connecting to Interstate 5 at Redding. Additional improvements at about six locations along SR 299 would raise the route to Federal interstate STAA standards. However, earlier assessments by HCAOG and other planning agencies determined that these potential SR 299 projects would be the most expensive and difficult to program with STIP (State Transportation Improvement Program) funds. The projects' cost/benefit analysis would have to demonstrate sufficient traffic demand and market potential to justify programming funds for these projects over other projects.

U.S. Highway 101

Overall, U.S. 101 in Humboldt functions well for goods movement. No segments suffer severe congestion. However, timber industry representatives have commented that widening U.S. 101 to four-lanes from San Francisco to Crescent City would reduce congestion and therefore save the industry travel time and costs (HCAOG 2008). These savings will have to be quantified to determine whether the cost/benefit ratio, including safety and operational factors, would warrant

expanding the highway. As discussed above, Caltrans District 1's project for U.S. 101 through Richardson Grove State Park would open access for STAA trucks.

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 local crossing traffic.

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.

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.

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 is $9,000 per mile (Humboldt County 2002) annually.

The County receives approximately $2,850 per road mile from annual State gas tax funds to maintain the county road system. 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 "major port issues" are

- Economic impacts from non-indigenous species
- Navigation hazards due to sediment deposits (shoaling) from Eel River
- Cargo handling facilities in disrepair (Caltrans 2012)

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
Rail-on-Barge Service	– Fields Landing Terminal – Humboldt Bay Forest Products – Schneider Dock

(Table continues on next page.)

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 HWY 255;
- Bay Street – New Navy Base Road to Vance Ave; and
- Samoa Pulp Lane (aka LP Drive) – New Navy Base Road to Vance Ave.

The other four roads are currently privately-owned:

- Vance Ave – Bay Street to Samoa Pulp Lane;
- Vance Ave – 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

"As developable land is scarce and sold at a premium, abandoned rail lines and adjacent right-of-way offer one way to accommodate the need for passenger rail service, nonmotorized transport, and recreational services."

– California State Rail Plan 2013

The "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). Therefore, it is uncertain whether NCRA would prepare an EIR for the Eel River Division project.

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, have entered into a Memorandum of Agreement with the County of Trinity, County of Tehama, and the UpState California Economic Development Council to support creating the "UpState Rail Connect Committee." The committee is "gathering information on the feasibility of establishing a rail line between the harbor portion of Humboldt Bay and the national rail system in the Sacramento Valley" (UpState Rail Connect Committee Memorandum of Agreement, October 16, 2012).

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) in recent planning documents: (i) the Planning Commission's approved draft of the *General Plan Update* (Circulation Element Policy C-P44, and Economic Development Element Policy ED-P12, March 19, 2012) and (ii) "Redwood Coast Targets of Opportunity 2012" (County of Humboldt, 2013).

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 $400,000 (2015 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[2] ($000)
Harbor District	Redwood Marine Terminal Modernization (Option B)	LT	Establish a multipurpose, publicly-owned marine terminal with two berths. Develop a single multipurpose berth for the short-term, designed to be integrated into long-term terminal development.	Not funded	Unknown	$32,000 to $38,000 (initial cost in 2008 dollars)
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	2015	$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	2015	$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
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	2017	$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	2017	$239
Humboldt County	New Navy Base Road – State Route 255 to Bay St.	LT	Improve to NHS standards to serve marine terminals.	Not funded	Unknown	$1,929

Table continues on next page.

Lead Agency	Project Name	Short or Long Term[1]	Description	Funding Source	Implementation Year(s)	Estimated Cost[2] ($000)
Freight Rail Improvements – *The following improvements have been identified in terms of goals and objectives for freight rail. Because no specific projects are proposed at this time, HCAOG identifies the following improvements to document HCAOG's advocacy for rail improvements that will enhance the region's goods movement system.*						
Harbor District and NCRA	Northern Freight Corridor Restoration Project (*from 2008 RTP*)	LT	Project seeks to reduce shoaling in Humboldt Bay (to enhance navigation efficiency and safety), and rehabilitate the Northern Corridor of the NWP railroad from the Port of Humboldt Bay to South Fork. The project would open up the potential for excursion passenger train service within the NCRA's Northern Corridor Rail.	Not funded	Unknown	Unknown–TBD
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	*$5,448*
					Long-term Subtotal	*$34,907 to $40,907+TBD*
			Regional Projects–Funded (constrained) **Subtotal**			**$ 0**
			Regional Projects–Not funded (unconstrained) **Subtotal**			**$40,355 to 46,355 + TBD**
			REGIONAL GOODS MOVEMENT PROJECTS TOTAL			**$40,355 to $46,355 + TBD**

[1] Short-term is 0-10 years; long-term is 11-20 years. [2] Estimated in 2015 dollars assuming 3% annual rate of inflation.

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 collision rates exceed statewide averages? Have rates of 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 congestion decreased? Has travel time decreased for passengers, freight/goods trips?	• Travel mode split (shares) for freight transport. • Annual average delay per mile of roadway segment (per passenger, automobile, freight truck trips). • 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 arterial and collector roadways improved (weighted average countywide)? Do road, aviation, and maritime facilities meet standards for state of	• 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
		good repair? Is the road maintenance or rehabilitation backlog decreasing?		
	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 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 transportation CO_2 emissions decreased per capita?	• Total transportation CO_2 per capita.	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.	
	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. • Truck travel time to major corridors (for freight transport)	General Plan updates, Airport Land Use Compatibility Plan, Airport Master Plans.
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?	
	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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RESOURCES

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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 April 2010)

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.

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 have 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.[9]

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

[9] "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)

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.

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

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.
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.

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):[10]

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

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

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

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.

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	**Rural ITS Planning Project**
	Work with partner agencies to implement an Intelligent Transportation System (ITS) project to improve the region's rural transportation safety solutions. This project will evaluate which ITS application(s) would be most valuable and feasible for the region to pursue first. Examples of ITS technological applications include: traveler information websites, satellite positioning technology, emergency vehicle preemption, and variable message signs. This project would be coordinated with and would build upon HCAOG's "Transit Intelligent Transportation System" project from the 2012-13 Overall Work Program.
Project 2	**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). This project could also address improving communications and leadership between the agencies and training within transit agencies.

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 purpose of the Financial Element is to "demonstrate how the adopted transportation can be implemented" and to provide "system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways and public transportation" (23 CFR 450.322(f)(10)).

Below, under Finance Plan, this chapter estimates the costs and revenues to implement the projects that are listed in the regional projects tables of each mode, identified in the respective RTP elements. Both financially constrained and unconstrained (i.e. funded and unfunded) projects are identified. The Financial Element's tables summarize the forecasts of future costs and revenues by mode, and show, to the best of our knowledge, potential (and known) funding shortfalls.

> Maintaining the current performance of the highway and transit system would require at least $13 billion per year more than current spending…funding highway projects whose benefits exceed their costs would require even more—up to about $83 billion per year more than current spending, according to the FHWA.
>
> – Congressional Budget Office, 2013

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 2014 RTP and included in the Federal Transportation Improvement Program (FTIP) pursuant to the STIP guidelines.

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.

STATUS OF TRANSPORTATION FUNDING

Most of the transportation funding in the U.S. is authorized by the federal transportation bill. The transportation bills of the last two 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.
- 2013-2014 Moving Ahead for Progress in the 21st Century (MAP-21), $109 billion. (CEAL 2012).

"MAP-21" FEDERAL TRANSPORTATION BILL

The Moving Ahead for Progress in the 21st Century Act (MAP-21, Public Law 112-141) is the most recent federal authorization for highway and transit programs. MAP-21 apportions Federal-Aid Highway Program funds for federal fiscal years 2013 and 2014, and expires on September 30, 2014. Federal transportation funds are paid from the Highway Account of the Highway Trust Fund for Federal-Aid Highways.

Table *Finance-1* MAP-21 Core Programs

Federal Programs Under MAP-21	Legislative Authorization	National Authorization Levels (estimated) FY 2013, FY 2014	California Apportion-ment FY 2014[1]	Federal Share in Projects[2]
CMAQ *Congestion Mitigation and Air Quality Improvement Program*	MAP-21 §1113 (23 U.S.C. 149)	$2.21 billion, $2.23 billion	$468,142,391	
HSIP *Highway Safety Improvement Program*	MAP-21 §1112 (23 USC 148(b), 150(b)(1))	$2.39 billion*, $2.41 billion*	$198,850,884	90%
Metropolitan Planning	MAP-21 §1105, 1201(23 USC 120)	$311 million, $314 million	$48,963,903	Per 23 USC 120
NHPP *National Highway Performance Program*	MAP-21 §1106 (23 U.S.C. 119)	$21.75 billion, $21.93 billion	$1.9 billion	80%; 90% for projects on the Interstate System; 65% for a State not conforming with an asset management plan
STP *Surface Transportation Program*	MAP-21 §1108 (23 USC 133)	$10.00 billion*, $10.09 billion*	$896,515,526	80%; 90% for projects on the Interstate System; 100% for workforce development, training, and education activities
TAP *Transportation Alternatives Program*	MAP-21 §1122 (23 USC 213(b) and 101(a)(29))	$809 million, $820 million	2% of total federal highway apportionment	80% for most TAP projects
TTP Tribal Transportation Program	MAP-21 §1119 (23 USC 201, 202)	$450 million, $450 million	N/A (allocated to Tribes)	100%
	Apportioned Total		*3,561,552,534*	

[1]U.S. Department of Transportation-FHWA (www.fhwa.dot.gov/map21/table2014.cfm, accessed July, 2013).

[2]Federal share may be subject to the upward sliding scale adjustment for States containing public lands, or other exceptions. Projects incorporating Innovative Project Delivery as described in 23 U.S.C. 120(c)(3) may have an increased Federal share. See legislation for details.

*Calculated (sum of estimated individual State apportionments (HSIP and STP, respectively)).

Source: www.fhwa.dot.gov/map21 (accessed July 2013).

Once each State's total Federal-aid apportionment is calculated, funds are set aside for Metropolitan Planning and the Congestion Mitigation and Air Quality Improvement Program (CMAQ) The remainder is divided among the rest of the formula programs as follows: 63.7% for the National Highway Performance Program (NHPP); 29.3% for the Surface Transportation Program (STP); and 7.0% Highway Safety Improvement Program (HSIP). Funds for each State's Transportation Alternatives Program (TAP), new under MAP-21, equal 2% of the State's total Federal-aid Highways Program apportionment [23 USC 213(a)]. Funds for the Railway-Highway Crossing Program are derived from a set-aside of the State's HSIP apportionment (www.fhwa.dot.gov/map21/rhc.cfm, accessed July 2013).

MAP-21 changed several of the federal transportation programs and funding streams. These changes are described later in this chapter, under "Transportation Funding Sources."

STATUS OF THE HIGHWAY TRUST FUND

The federal government's surface transportation programs are financed mostly through the Highway Trust Fund. The fund sets up two separate accounts, one for highways and one for mass transit (which finances 80 percent of federal transit programs). The fund derives its revenues mostly from excise taxes on gasoline and certain other motor fuels and interest earned on its accumulated balances. The taxes are levied on a cents-per-gallon basis and are not indexed to inflation. Because fuel consumption continues to decline, the nation is facing a very real, near-term insolvency crisis with the Federal Highway Trust Fund.

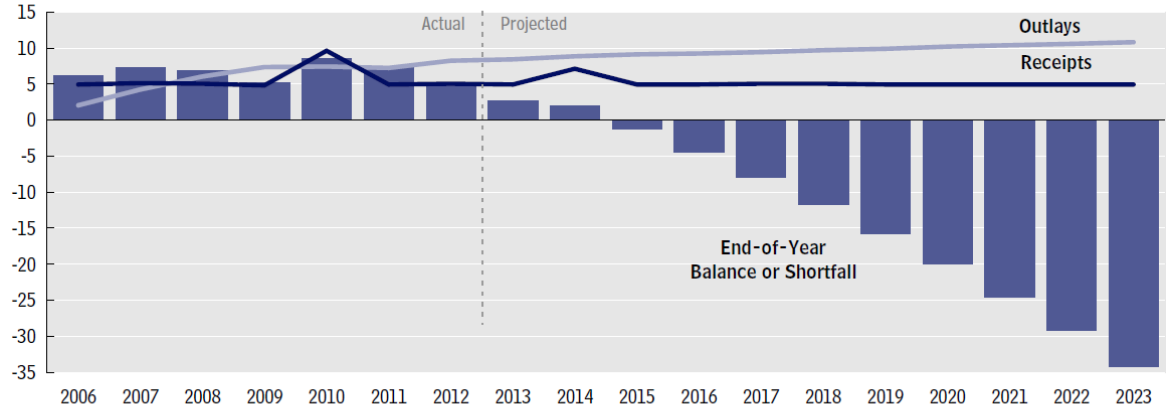
> "The current trajectory of the Highway Trust Fund is unsustainable. Starting in fiscal year 2015, the trust fund will have insufficient amounts to meet all of its obligations, resulting in steadily accumulating shortfalls."
>
> – Congressional Budget Office, 2013

To make up for revenue shortfalls, Congress has, since 2008, transferred money from the Treasury's general fund to the Highway Trust Fund. With MAP-21 (enacted in 2012), Congress transferred $18.8 billion from the general fund and $2.4 billion from Leaking Underground Storage Tank Trust Fund. However, Congress did not create any new, ongoing revenue for the Highway Trust Fund (CBO 2013a).

The two charts below project balances of the federal highway trust fund and the transit account for the coming decade (i.e., to year 2022-2023).

Receipts, Outlays, and Balances of the Transit Account

(Billions of dollars)

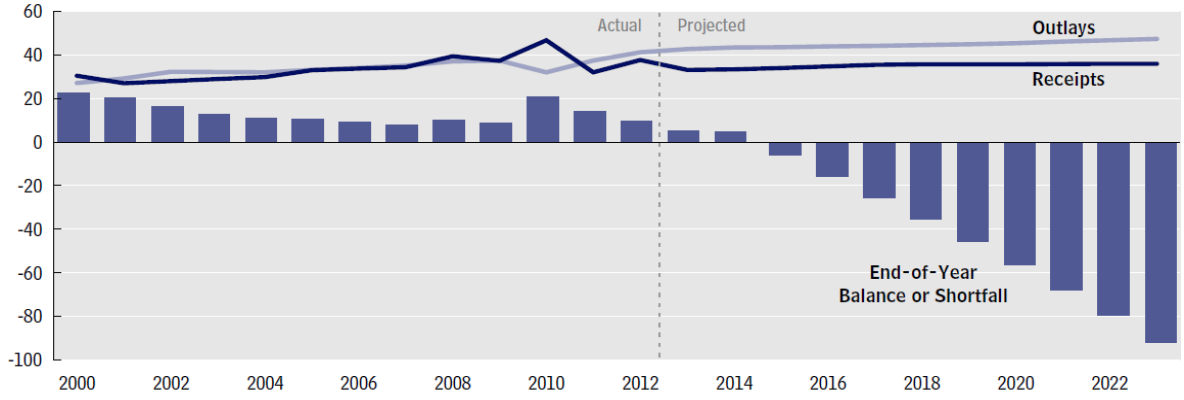


Source: Congressional Budget Office.

Note: Estimates are based on CBO's February 2013 baseline projections.

Receipts, Outlays, and Balances of the Highway Trust Fund

(Billions of dollars)



Source: Congressional Budget Office.

Note: Estimates are based on CBO's February 2013 baseline projections.

Source: CBO 2013a.

STATUS OF THE STATE HIGHWAY ACCOUNT

The viability of the State Highway Account (SHA) also continues to be a cause for concern. The SHA funds the State Highway Operation and Protection Program (SHOPP), which finances projects to maintain the State Highway System. Additionally, unallocated funds in the SHA may be used to make short-term loans to advance the capital improvement phase of STIP-eligible projects, provided the project costs over $10 million and is included in an adopted RTP. (www.dot.ca.gov/hq/innovfinance/sha_loan/sha_highlights.htm, accessed July 2013.)

The SHA is funded by state gasoline and diesel fuel excise taxes. In 2013, the State adjusted the tax rate for inflation for the first time in over 15 years. SHA funding is declining as a result of reduced fuel consumption, limited federal funding resulting from the federal excise tax, and redirection of funding for highway maintenance.

Caltrans estimated the cost to sufficiently fund the SHOPP to meet needs. For the next ten years (FY 2014-2015 through FY 2023-24), the "goal-constrained need" is $82 billion (escalated dollars), or $8.2 billion per year. This amount would cover capital construction, right-of-way acquisition, and project development and construction engineering support. Unfortunately, the projected SHA funding available for the SHOPP is $2 billion a year, or just 25% of the estimated goal-constrained need (Caltrans 2013b).

Caltrans has developed a ten-year plan for the SHOPP, based on the anticipated funding shortage. Caltrans estimates that the SHOPP will be funded statewide at $2 billion annually. The ten-year "financially-constrained needs plan" estimates a total need of $2,082,000,000 annually (2012 dollars) from fiscal year 2014-2015 through 2023-24, (Caltrans 2013b).

STATUS OF LOCAL TRANSPORTATION FUNDING

In light of constrained funding for transportation and economic hardships for both state and federal governments, competition for limited resources will continue to be pressing for the region. This creates an environment in which HCAOG must build on its leadership role in its regional capacity to prioritize candidate projects that promote an efficient regional transportation system. There remain several million dollars of programmed STIP projects that HCAOG has nominated that are still awaiting funds from the California Transportation Commission.

A local sales tax will augment limited state and federal sources, and are sometimes more predictable to budget for. 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. In Humboldt County, the following jurisdictions have recently had sales tax initiatives:

- City of Arcata, general purpose tax – Approved in 2008, Measure G added an additional three-quarter percent (¾%) retail transactions and use tax levied within the City of Arcata. The increased tax is estimated to generate approximately $1.5 million per year for the City's general fund. The City Council allocates these funds for general city needs they identify, including transportation projects, infrastructure improvements, public safety, and improving City facilities and services.
- City of Eureka general purpose taxes – In November 2008, Eureka voters approved Measure D, adding one-quarter of one percent (¼%) to the sales tax rate in the City of Eureka, and simultaneously repealing an existing 3% Utility Users Tax. In November, 2010, voters passed Measure O, levying a one-half of one percent (½%) increase to Eureka's sales tax rate. The ½% tax is estimated to generate approximately $3.2 million per year. Measure O became operative on April 1, 2011 and terminates five years thereafter. The City plans on placing a measure on the ballot in 2014 to renew the ½% sales tax. Eureka's sales tax revenues go into the City's

General Fund to pay for "essential services" under general City operations and programs, including street maintenance.

- City of Rio Dell –Bonds for Street Improvements – In November, 2012, City of Rio Dell voters were asked to pass Measure J, to authorize the City Council to issue $2 million in general obligation bonds to finance the costs of constructing street improvements. The bond measure failed. Although a majority (55.6%) of voters voted yes, a two-thirds (2/3) approval was required to pass.
- City of Trinidad general purpose tax – In November, 2012, City of Trinidad voters approved extending, for four years, the ¾ cent (¾ %) increase in the transaction and use tax. The extension is effective from April 1, 2013 through March 31, 2017.

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 3%.

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

Assumptions:

- **STIP Funding Levels:** HCAOG based STIP funding forecasts on Humboldt County's STIP shares from 2009 through 2013. Over those five years, Humboldt's total share ranged from $26.4 million to $37.0 million (STIP shares represent five years' worth of funding). However, these STIP levels include Transportation Enhancement (TE) monies, which are no longer included in the STIP. Instead, those monies will be available through MAP-21's new TAP or the State's new Alternative Transportation Program (ATP). Therefore, HCAOG has subtracted the average amount of TE money, $3.3 million, to forecast future STIP levels. The average STIP share, without TE monies, was $28.8 million in the last five years.

- **TAP/ATP Funding:** HCAOG assumes that jurisdictions in Humboldt will be successful in garnering TAP/ATP funding equivalent to TE monies from the STIP. Annual funds are assumed to be $3.3 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:** The State was allocated, over a four-year period through fiscal year 2011-12, $159.3 million in SHOPP funds for Humboldt County. HCAOG shall assume the same funding levels for the 20-year projection.
- **RSTP Funding Levels:** For the past several years, the regional portion of STP funds was $1,147,300 annually. In fiscal year 2012-13, HCAOG received $1,318,500. For the 20-year forecast, HCAOG assumes a conservative average of $1,200,000.
- **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 $410,000 has been available for spending on roads. Thus, over 20 years, $9.8 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. The County and the Cities directly receive a total of $4.5 million per year in gas tax subventions. These funds can be used for any roadway expense (e.g. engineering, other maintenance). Using State Controller's data, it can be assumed that 40% of subventions are used for non-major rehabilitation/construction projects. Therefore, the annual estimate is $2.7 million (60%).
- **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. For example, several member agencies will be applying for federal TIGER grants for the Humboldt Bay Trail[11] and other projects. HCAOG has no solid basis for estimating the amount of grant funds we will receive, either collectively or individually. 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-2*, below, shows the summary of reasonably anticipated revenues and costs for projects (excluding SHOPP) identified in the "Complete Streets Element" of this RTP. The revenue estimates are simple projections of current revenues over 20 years, increased by 3% annual inflation. The value in this exercise is less as a definitive calculation than as an indicator of a significant problem: estimated revenues for the next 20 years equal 94% of the revenue needed to meet *existing* needs.

[11] The Coastal Commission, as a condition of approving a coastal development permit for Caltrans' 101 Corridor Improvement Project, requires that adequate funding be in place for a separate bike and pedestrian (Class 1) trail parallel to Route 101 from Arcata to the northern end of downtown Eureka.

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.

Table *Finance-2*. Financial Projections for HCAOG Regional Complete Streets Projects[1]

Revenue/Cost	Annual Projected Revenues (2013 dollars, in $1,000s)	20–Year Projected Revenues ($1,000s)	Existing Costs/Backlog ($1,000s)	Difference in 20-year revenue to current costs
HSIP	590	15,900		
ITIP	750	15,000*		
STIP	5,800	156,000		
TAP/ATP	3,300	88,700		
RSTP	1,200	32,200		
LTF (for roads, ped, and bike)	490	13,100		
Gas Tax Subventions	4,500	72,500		
Funded Priority Projects			42,780	
Unfunded Priority Projects			165,500	
Maintenance Backlog			211,370	
Totals	**16,600**	**393,400**	**419,650**	**94 percent**

[1]Costs and revenues have been projected assuming an annual rate of inflation of 3%.

*One-time share of $15million, therefore not calculated for inflation.

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).

In the 2008 RTP Update, HCAOG assumed that costs would grow with inflation, and that the annual inflation rate would be four percent (4%). As it turns out, the annual inflation rate in the United States has been much lower, ranging from 3.8% in 2008 to a low -0.4% (deflation) in 2009. The inflation rate average for the last five years, 2008-2012, is two percent (2%). The approximate average for the last 20 years (1990-2011) is 2.5%. For the updated planning period (fiscal year 2013/14-2023/24), we are assuming operations and maintenance costs will increase, on average, three percent (3%) annually. Inflation rates based on the Consumer Price Index (U.S. Bureau of Labor Statistics 2013).

Assumptions:

- **Revenues & Costs:** For operations and capital, revenues and costs are assumed to stay flat in constant dollars, but increase by a 3% annual inflation cost.
- **TDA Allocation:** TDA revenues will continue to be allocated per the current formula.
- **STA Fund (TDA funds):** In fiscal years 2012-13 and 2013-14, local transit operators received a total of $847,000 and $793,000, respectively. HCAOG assumes an average of these ($820,000 annually) for forecasting 20 years of STA revenues.
- **LTF Transit Monies (TDA funds):** In fiscal year 2012-13, the County and Cities spent $3,670,900 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 (FFY 2009-2012), HCAOG assumes that Humboldt will receive an annual average of $135,000 (plus inflation) over 20 years.
- **FTA 5311:** HCAOG's program of projects for FTA 5311 funds totaled $519,855 in 2011 and in 2012, and $884,620 in 2013. HCAOG forecasts future annual revenues to be $700,000, based on recent estimates.

Public Transit Financial Projections

The current *Transit Development Plan* (HCAOG 2012) 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 for fiscal years 2011/12 to 2015/16. Table *Finance-3* summarizes the TDP's five-year financial projections for public transit. The table also projects transit's long-term (20-year) costs and revenues.

Table *Finance-3.* Transit System Financial Projections[1]

Transit System	Revenues FY 2011/12 ($1,000s)	Revenues, 20-Year Projection ($1,000s)	Annual Costs FY 2011/12 ($1,000s)	Costs, 20-Year Projection ($1,000s)
HTA	$4,235	$113,800	$4,090	$109,900
ETS	$2,425	$65,100	$2,590	$69,600
A&MRTS	$1,150	$30,900	$1,055	$28,300
K-T NeT	$95	$2,600	$95	$2,600
FTS	$165	$4,400	$165	$4,400
BLRTS	$35	$900	$35	$900
System Total (rounded)	**$8,100**	**$217,700**	**$8,000**	**$215,700**

[1] Simple 20-year projections with 3% annual inflation rate. Revenues and costs include operations and capital.
Source: "FY 2011/12-2015/16 Transportation Development Plan for Humboldt County Transit Systems," HCAOG, 2012.

Table *Finance-4.* Projected 20-Year Transit Program Revenues

Program Source	Forecasted Annual ($1,000s)	Forecasted 20 Years* ($1,000s)
FTA 5310	135	3,600
FTA 5311	700	18,800
LTF (Transit funds)	3,670	98,600
STA Fund	820	22,000
Total	**13,325**	**143,000**

*Assumes 3% annual inflation.

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.

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.

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*-5 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-5*. 20-Year Projected Transportation Revenues and Costs

Mode	Year 1 Projected Revenues* (000s)	20-Year Projected Revenues* (000s)	20-Year Projected Costs (000s)
Complete Streets			
Priority Regional Projects (Table *Streets*-5)			277,620[1]
All Projects (Table *Streets*-6)	16,000	393,400	514,700+
Public Transportation (Table *Finance*-3)	8,100	217,700	38,208+TBD
Aviation (Table *Aviation*-3)	n.a.	TBD	15,303
Goods Movement (Table *Goods*-3)	n.a	TBD	40,355 to 46,355+TBD
Emergency Transportation (Table *Emergency*-1)	–	–	0
SUMS	**24,100**	**611,100**	**608,566 to 614,566+TBD**

*Does not account for individual grants. Assumes 3% annual rate of inflation.
[1]This amount is included in the cost of "All Projects".

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 Update* (2012).)

The following federal programs have expired, or were eliminated (not reauthorized) in the passage of MAP-21:

- Federal Lands Highway Program – A SAFETEA-LU program that expired on September 30, 2009; replaced with the Federal Lands Access Program.

Every $1 invested in public transportation generates approximately $4 in economic returns. Every $1 billion invested in public transportation creates or supports 36,000 jobs.

– American Public Transportation Association, 2012

- FTA Section 5316 - Job Access and Reverse Commute (JARC) – Public transportation job-access activities are eligible for funding under FTA Section 5307 (urban) and 5311 (rural) transit programs.
- FTA Section 5317 New Freedom Program – Projects are eligible for funding under the FTA Section 5310 program.
- Hazard Elimination Safety Program (HES) – Replaced with the Highway Safety Improvement Program (HSIP).
- Highway Bridge Program – SAFETEA-LU program expired in 2009. Related activities for NHS bridges and tunnels are eligible under MAP-21's NHPP.
- Indian Reservation Roads (IRR) Program – Replaced with the Tribal Transportation Program (TTP).
- National Highway System – Subsumed under and replaced by the NHPP core program.
- Federal Safe Routes to School (SRTS) – SRTS activities are eligible to compete for funding under the new MAP-21 Transportation Alternatives Program (TAP).
- Transportation Enhancement Activities (TE) – Subsumed under and replaced by the TAP.

The table below indexes the transportation funding programs potentially available to HCAOG and/or HCAOG member entities, transit operators, and tribes. Each program is described below.

Table *Finance-6.* 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.
Airport Improvement Program	AIP	Airports
California Office of Traffic Safety Grants	OTS	Pedestrian & bicycle
California Safe Routes to School	SR2S	Highway, roads, pedestrian & bicycle
California Streets and Highways Code §887.8(b) & §888.4	n/a	Non-motorized facilities
Caltrans' Division of Aeronautics Grants & Loans		Aviation
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
Environmental Enhancement and Mitigation Program	EEMP	Highway landscaping, resource lands projects,
Federal Airport Improvement Program	FAIP	Aviation
Federal Lands Access Program	FLAP	Highway
Federal Transit Administration (FTA) Section 5304	5304	Education for State Departments of Transportation
FTA Section 5310	5310	Transit, para-transit and senior transit
FTA Section 5311	5311	Rural transit
FTA Section 5311(b)(2)(3) Rural Transit Assistance Program	RTAP	Transit support services, training, technical assistance, research

Table continues on next page.

Program	Abbreviation	Eligible Modes/Purposes
Highway Safety Improvement Program	HSIP	Streets (local), highway, roads, pedestrian & bicycle, Safe Routes to School, workforce development, training & education
Interregional Transportation Improvement Program	ITIP	State highways, intercity rail, and transportation enhancements
Local Highway and Bridge Program	HBP	Highway bridges
Mello-Roos Community Facilities Act of 1982-Community Facilities District	Mello-Roos	Roads, pedestrian & bicycle
Proposition 116: Clean Air & Transportation Improvement Act of 1990	Prop 116	Transit, pedestrian & bicycle
Proposition 1B: The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006	Prop 1B	Highways, roads, transit, traffic reduction, air quality, port security, air quality, bridges, railroad crossings
Recreational Trails 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 Program	STP	Highway, roads, bridge, pedestrian & bicycle, transit, environmental mitigation, streets (local)
Trade Corridor Improvement Fund	TCIF	Trade corridors (highways, roads, freight railways, ports and bridges, air freight)
Traffic Congestion Relief Program, Proposition 42	TCRP	Highway, roads, transit facilities
Transportation Alternatives Program	TAP	Pedestrian & bicycle, recreational trails, transit, environmental mitigation, Safe Routes to School, landscaping
Transportation Development Act of 1971	TDA	Highway, roads, transit, pedestrian & bicycle
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.

Airport Improvement Program (AIP) – *Federal*

The Federal Aviation Administration (FAA) administers the Airport Improvement Program, which provides grants for planning and developing public-use airports included in the National Plan of Integrated Airport Systems (NPIAS). (Humboldt's six county-owned airports are registered in the NPIAS.) Eligible projects include improvements to enhance airport safety, capacity, security, and mitigate environmental concerns. Projects related to airport operations and revenue-generating improvements are typically not eligible for funding. The program provides 90 percent federal participation and ten percent local participation on small primary, reliever and general aviation eligible airport projects in California.

The AIP was reauthorized, under the FAA Modernization and Reform Act of 2012, for four years, FFY 2012 through 2015. National funding levels are set at $3.35 billion per year. Because the demand for AIP funds exceeds what is available, the FAA distributes funds based on current national priorities and objectives.

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.

Caltrans' Division of Aeronautics Grants & Loans – *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 was updated in 2011, and the Capital Improvement Plan was updated in 2013.

The State's four aviation funding programs are:
Acquisition and Development Grant Program – A&D Grant Program funds can be used for construction projects, land acquisition and planning projects such as Master Plans and airport layout plans. The minimum grant amount is $10,000; the maximum is $500,000. The state's grant share is 90 percent and the local match is 10 percent. The CTC allocates these state grants based on priorities set forth in the STIP and the CASP.

Annual Credit Grants – The Annual Credit Grant provides $10,000 per year to eligible public use airports. With the permission of the Division of Aeronautics, an airport can accumulate its funds for up to five years to save for a large capital project. The funds can also be used as part of a local match for federal grants. Commercial service and reliever airports are not eligible for this annual grant.

Airport Loan Program – The program provides loans to eligible public airports, at below-commercial interest rates. The maximum term of a loan is 17 years. Loan funds can be used for specified revenue-generating projects, and as the local share for FAA grant-funded projects. Loans are most commonly used for constructing revenue-producing hangars, and developing facilities for storing and dispensing aviation fuel (http://www.dot.ca.gov/hq/planning/aeronaut/documents/grants_and_loans/Grants_Loans_Web_Loan_Program.htm, accessed July 2013).

State AIP Matching Grants – Effective May 24, 2012, the State AIP Match Rate has been set at 5.0 percent of the federal grant (4.5 percent of total project cost). The remaining match must be provided by the local agency; however, the Annual Grant funding can be applied toward this match. To be eligible, projects must be included in the State Transportation Improvement Program.

Caltrans Transportation Planning Grant Programs – *State*

These grants support "the multi-modal transportation system of the future" which is integrated, connected and resilient, and offers mobility and accessibility for all people. The State wants to create a multi-modal system to reduce GHG emissions (AB 32 and SB 375 goals) and support California's planning goals: economy, equity, and environment. Caltrans' Division of Transportation Planning administers these grant programs through the Office of Regional and Interagency Planning (ORIP). Grant programs change periodically, but the intent of the transportation planning grants remains generally the same: to promote a balanced, comprehensive, multimodal transportation system.

Community-Based Transportation Planning (CBTP) –Funding is available for "coordinated land use and transportation planning that promotes public engagement, livable communities, and a sustainable transportation system, which includes mobility, access, and safety" (Caltrans 2013a).

Environmental Justice Transportation Planning – Funds support projects that focus on transportation and community development issues that address the interests of low-income, minority, Native American, and other under-represented communities. Grant funding aims to involve those communities "in

planning transportation projects to prevent or mitigate disproportionate, negative impacts while improving mobility, access, safety, and opportunities for affordable housing and economic development" (Caltrans 2013a).

Strategic Partnerships – Grant funds are available for transportation planning studies of multi-regional and statewide significance, in partnership with local agencies. Studies must align with implementing the Sustainable Communities Strategy (SB 375).

Transit Planning – Grant fund are available for public transportation planning studies in rural or small urban areas of California (transit service area with population of 100,000 or less). The aim is for planning studies that would improve transit services and help relieve congestion by offering a sustainable alternative to the single occupant vehicle. Studies should address transit planning issues of statewide or regional significance.

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 100% 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 program is funded by a permanent annual authorization of $100 million from the highway trust fund (HTF) along with general fund appropriations provided by Congress on a "such sums as necessary" basis (http://flh.fhwa.dot.gov/programs/erfo, accessed July 2013).

Environmental Enhancement and Mitigation Program (EEMP) – *State*

The EEMP, established in 1989, is funded from State gasoline tax monies. EEMP provides $10 million annually for grants to mitigate the environmental impacts of modified or new public transportation facilities. The California Natural Resources Agency evaluates grant proposals, and Caltrans administers the program. Grants are awarded in four categories: Highway Landscaping and Urban Forestry Projects; Resource Lands Projects; Roadside Recreation Projects; and Mitigation Projects Beyond the Scope of the Lead Agency.

Eligible EEMP projects mitigate over and above the minimum required for the related transportation project. Grants are generally limited to $350,000. EEMP does not require matching funds or cost shares for grants; however, projects with the highest proportion of other sources of monetary funding are rated highest (www.resources.ca.gov/eem, accessed July 2013).

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 2013-14, $900,000 was available and the maximum grant was $100,000 (Caltrans 2013a).

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 July 2013).

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 (FLAP) – *Federal*

This MAP-21 program replaces the Federal Lands Highway Program. The goal of the Access Program is to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. The Access Program supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators (www.fhwa.dot.gov/map21/guidance/guideflap.cfm, accessed August 2013).

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.fhwa.dot.gov/map21/ guidance/guidehsip.cfm, accessed July 2013).

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.

Proposition 1B: The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 – *State*

California voters approved funds from bond revenues to be allocated for the following purposes:

Congestion Reduction, Highway and Local Road Improvements ($11.3 billion) – for capital improvement projects to reduce congestion and increase capacity on state highways, local roads, and public transit. Funds for local streets and roads projects are distributed by a formula based on a county's ratio of registered vehicles (75% of funds) and ratio of county-maintained road miles (25% of funds), relative to counties statewide. Eligible public transportation projects include capital improvements such as purchasing buses and rail cars, and making safety enhancements to existing transit facilities. As of May 7, 2013, $1.15 billion of the $3.6 billion authorized transit funds remained unallocated (Caltrans 2013b).

Safety and Security ($1.5 billion) – for projects to protect against a security threat or improve disaster response capabilities on publicly owned ports, harbors, and ferry terminals (grants administered by the State OES) and transit systems. Also for grants to improve the safety of rail crossings, and seismically retrofit local bridges, ramps, and overpasses.

Goods Movement and Air Quality ($3.2 billion) – for projects to improve the movement of goods via ports, state highways and rail. Also for projects (administered through CARB) to improve air quality by reducing emissions related to goods movement and replacing or retrofitting school buses (Caltrans 2013b).

Proposition 116: Clean Air & Transportation Improvement Act of 1990 – *State*

Under Proposition 116, non-urban county transit funds can be made available for transit or non-motorized facilities. These funds are provided on a per capita basis, using the Federal census. In 2010, the CTC reported, of the original $1.99 billion authorization, $153.5 million remained unallocated (not encumbered or expended). "The inability to sell bonds due to the State's fiscal problems has prevented the Commission from approving Proposition 116 allocations that have been requested by agencies" (CTC Resolution PA-10-01; February, 24-25, 2010).

Recreational Trails Program – *Federal*

MAP-21 (Section 1122) amended the Recreational Trails Program to make the funding a set-aside from the TAP. 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 (23 U.S.C. 213(f)-(g)).

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. Because funding is insufficient to preserve and maintain the existing transportation infrastructure, Caltrans will continue to focus on available resources on the most critical categories of projects in the SHOPP (emergency, safety, bridge, and pavement preservation)(Caltrans 2013b). 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 Program (STP) – *Federal*

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

MAP-21 continues the special rule for funding projects on minor collectors. Up to 15 percent of the amounts required to be obligated in areas with a population of 5,000 or less for each of fiscal years 2013 through 2014 may be obligated on roads functionally classified as minor collectors. (The Secretary may suspend this special rule with respect to a State if the FHWA division office determines that this authority is being used excessively by the State (23 U.S.C. 133(h).) (www.fhwa.dot.gov/map21/stp.cfm, accessed July 2013.)

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 STP is set aside for TAP and State Planning and Research. Federal STP monies come to HCAOG as Regional STP (RSTP) money.

Transportation Alternatives Program (TAP) – *Federal*

"MAP-21 established TAP as a new program that provides for a variety of alternative transportation projects, including many that were previously eligible activities under separately funded programs." Programs and projects defined as "transportation alternatives" include on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways. TAP projects are not required to be located along Federal-aid highways.

The TAP is a competitive program and is not included in the STIP. MAP-21 requires the State to have a competitive process to allow eligible entities to submit projects for funding; therefore, the State may not suballocate the nonurban area funds by population to individual counties, cities, or other local government entities (23 U.S.C. 213(c)(4)(A)) (www.fhwa.dot.gov/map21/tap.cfm, accessed July 2013).

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.

Tribal Transportation Program (TTP) – *Federal*

The Tribal Transportation Program supports projects that improve access to and within Tribal lands. This program generally assumes and replaces the Indian Reservation Roads program, adding new set-asides for tribal bridge projects (in lieu of the existing Indian Reservation Road Bridge program) and tribal safety projects. Annually, $450 million in TTP funds will be allocated among the Tribes using a new statutory formula based on tribal population (39%), eligible road miles (27%) and average tribal shares of SAFETEA-LU IRR funding (34% divided equally among the 12 Bureau of Indian Affairs (BIA) regions and then distributed among Tribes in that region). The new formula will be phased in incrementally over four years (FY2013-2016).

Eligible activities for TTP funds include:

- Transportation planning, research, maintenance, engineering, rehabilitation, restoration, construction, and reconstruction of tribal transportation facilities; environmental mitigation.
- Operating and maintaining transit programs and facilities that are located on, or provide access to, tribal land, or are administered by a tribal government.
- Any transportation project eligible for assistance under 23 USC that is located within, or that provides access to, tribal land, or is associated with a tribal government (http://www.fhwa.dot.gov/map21/ttp.cfm, accessed July 2013).

MAP-21 also authorizes the Tribal High Priority Projects Program, a discretionary program modeled on an earlier program from the IRRP. MAP-21 provides $30 million per year from the General fund (subject to appropriation) for this new program (www.fhwa.dot.gov/map21/summaryinfo.cfm, accessed July 2013).

U.S. Forest Service – *Federal*

The U.S. Forest Service places a fee on all timber receipts from national forests. By law (16 U.S.C. 500), "states are entitled to 25 percent of the receipts from timber sales located within their boundaries, so that the receipts can be used to benefit roads and schools in the counties where the receipts were earned" (GAO 1995). 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.

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 (Caltrans, 2013c).

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10. PUBLIC INPUT ELEMENT

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 spanned almost two years including the environmental impact assessment, did not occur in isolation. During that time, HCAOG also had public outreach and involvement for the Regional Housing Needs Allocation (December 2013), the Coordinated Public Transit–Human Services Transportation Plan (December 2013), the Public Participation Plan (July 2014), and the Unmet Transit Needs Process for Fiscal Year 2013/14 and 2014/15. HCAOG staff strives to make the transportation planning processes as coordinated and accessible as possible for all stakeholders.

PUBLIC & AGENCY OUTREACH

HCAOG notified stakeholders when all RTP Update public drafts were released and when special public meetings were held. HCAOG contacted known and potential stakeholders at the beginning of the RTP update, and asked them which transportation mode(s) (or RTP elements) they were interested in participating in. We notified stakeholders throughout the process based on their area(s) of interest.

HCAOG's RTP-specific database included the following entities.

Local & State Agencies
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

Active Transportation Advocacy Organizations
Arcata Bike Library
Big Foot Bicycle Club
Friends of Annie & Mary Rail-Trail

Green Wheels
Healthy Humboldt Coalition
Humboldt Bay Bicycle Commuters Association
Humboldt Kidical Mass
Humboldt Partnership for Active Living (project of Redwood Community Action Agency)
Humboldt People Powered Pathways Coalition
Melanie Williams at BikesThere.com
SafePATHs
Safe Routes to School Countywide Task Force
Safe Routes to School Greater Eureka Task Force

Trucking/Goods Movement Stakeholders
Fly Humboldt
Goselin Transportation
Humboldt County Aviation Advisory Committee
Johns Trucking
Zabel 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
California Network of Mental Health Clients
Friends of the Dunes
Humboldt Area Foundation
Humboldt Bay Working Group
Humboldt Coalition for Property Rights
Humboldt County Volunteer Organizations Active in Disaster
Humboldt Trails Council

Other Local Businesses
Greenway Partners

The following entities were notified through their membership, or other participation, in the respective HCAOG committee or Board.

Service Coordination Committee
Transit operators
Paratransit operators
Humboldt State University
College of the Redwoods
Caltrans-District 1 Local Assistance

Social Service Transportation Advisory Council
Area 1 on Aging
City Ambulance
Council for the Blind
Head Start
Humboldt Community Access and Resource Center (local Consolidated Transportation Service Agency)
Humboldt Transit Authority
Lighthouse for the Blind and Visually Impaired
Senior Resource Center
Tri-County Independent Living
Representative of potential transit users who is 60 years of age or older (citizen)
Representative of potential transit users who is handicapped (citizen)

Technical Advisory Committee
California Highway Patrol
Caltrans-District 1 Local Assistance
Cities and County Public Works Departments
Transit Operators
Native American Transportation/Planning Departments

Policy Advisory Committee
Caltrans-District 1
Humboldt Transit Authority
HCAOG Board of Directors

Board of Directors
City Mayors (or designees)
County Supervisor

Stakeholders who have requested to be on an HCAOG committee's "cc list" receive those meeting notices, agendas, and packets.

Additionally, HCAOG sent announcements, press releases, as well as required legal notices, to environmental regulatory agencies. HCAOG's master list for such agencies is based on the State Clearinghouse's distribution list of reviewing agencies, per CEQA. Local districts or offices of agencies not listed above included:

Federal:	Bureau of Land Management – Arcata Field Office
	US Fish & Wildlife Service – Pacific Southwest Region
State:	California Coastal Commission – North Coast District Office
	California Department of Fish & Wildlife – Northern Region
Regional:	North Coast Unified Air Quality Management District
	Regional Water Quality Control Board

PUBLIC PARTICIPATION

PUBLIC DRAFTS

To allow all parties more time to review the updates, HCAOG released individual draft chapters as they were ready. Each chapter was reviewed by HCAOG committees at their respective public meetings. These meetings were the first opportunities the public had to review and comment on administrative drafts. After committees reviewed administrative drafts (and staff revised, as necessary), staff brought the drafts to the HCAOG Board. The HCAOG Board approved releasing all public drafts.

HCAOG released the following initial drafts for public review and comments:

February 2013:	Public Transportation Element
May 2013:	Emergency Transportation Element, Complete Streets Element, and Commuter Trails Element
July 2013:	Goods Movement Element

That "initial public review" period of individual elements/chapters was followed by a more formal public comment period, which commenced when the whole draft RTP (i.e. all chapters) was released together. HCAOG released the full public draft of the "Humboldt 20-Year Regional Transportation Plan–Update 2014: Variety in Rural Options of Mobility" ("*VROOM"* for short) on October 1, 2013. The additional chapters that were released with the full draft were: the Introduction, Tribal Transportation Element, Aviation System Element, and Financial Element. The comment period for *VROOM* was October 1 to December 31, 2013.

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

PUBLIC MEETINGS

The public had opportunities to give comments on the RTP Update at any HCAOG meeting since the update process began. The first public meeting was August 3, 2012, when the Technical Advisory Committee was presented with the plan purpose and a draft outline. Since then, there have been dozens of committee meetings with the RTP Update on the agenda. The public could also present comments during the agendized "public participation" whenever the RTP Update was not on the agenda.

HCAOG's committee and Board regular public meetings are as follows:

- Service Coordination Committee – bi-monthly;
- Social Service Transportation Advisory Council – quarterly;
- Technical Advisory Committee – monthly; and
- Policy Advisory Committee and Board of Directors (meet concurrently) – monthly.

HCAOG held a special public meeting for the RTP Update, in conjunction with a public scoping meeting for the preparation of a Draft Environmental Impact Report (EIR). The meeting was held in the evening after a regularly-scheduled HCAOG Board meeting to make it convenient for Board members to attend.

In addition to HCAOG's meetings, HCAOG staff were available to attend other organizations' meetings. HCAOG staff attended one or more meetings, as requested, of the following organizations:

- Humboldt Association of Realtors
- Humboldt Bay Bicycle Commuters Association
- Humboldt County Aviation Advisory Committee
- North Coast Branch/San Francisco Section of the American of Society of Civil Engineers
- Safe Routes to School Countywide Task Force

MEDIA COVERAGE

The RTP Update was covered by local radio and newspapers. HCAOG used media outlets in the usual manner with press releases, public service announcements, and calendar listing (Times Standard, Two Rivers Tribune, North Coast Journal, etc). HCAOG staff and the Board Chair did radio interviews (KMUD, KHUM's Happy Trails). News articles were printed in The Redwood Times (in both print and electronic editions) and the Two Rivers Tribune.

ENVIRONMENTAL REVIEW

HCAOG, to comply with the California Environmental Quality Act (CEQA), assessed the environmental impacts that could potentially result from adopting and implementing the proposed Regional Transportation Plan Update 14. State and local agencies responsible for land use, natural resources, environmental protection, conservation and historic preservation were notified of the release of the Initial Study and the Notice of Preparation (at the end of October, 2013). In November, HCAOG held an agency scoping meeting to initiate preparing a Draft Program Environmental Impact Report (EIR), and to take any comments on the draft RTP. The agencies were also invited to the public meeting (that evening). HCAOG released the Draft Program EIR May 23; the public/agency review and comment period closed on July 7, 2014. During the comment period, HCAOG conferred with the following agencies on specific environmental issues

analyzed in the RTP Update Draft EIR: US Fish & Wildlife Service (Arcata Office), California Department of Fish & Wildlife (Redding and Arcata offices), the California Coastal Commission (Eureka Office), Caltrans District 1, and the County of Humboldt Environmental Services-Public Works Department.

On August 21, 2014, the HCAOG Board of Directors certified the Final Program EIR with the determination that, 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. The Final EIR is available to view under separate cover and at www.hcaog.net.

11x17 MAPS

Figure 1.2 **General Land Use**

Figure 1.3a **Population Centers and Major Destinations (Countywide)**

Figure 2.1 **Proposed Regional Class III Bicycle Facilities**

Figure 3.1 **Class I Regional Commuter Multi-Use Trails**

Figures 5.1a **Transit Routes (Countywide)**

Figure 7.1 **Goods Movement (Countywide)**

APPENDICES

APPENDIX I

Table *Streets-6*. Regional Complete Streets Projects

Table *Streets-6.Regional Complete Streets Projects*

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 Rd	ST	X	X	X	X	X	X	Rehab, ped-bike and calming improvements, gateway at Jacoby Creek Road	Measure G	2014-16	$950
Residential streets citywide	ST				X	X	X	Annual residential streets improvement program (see City's PMP)	Measure G	2014-24	$2,500
Valley East and Valley West Improvement project	ST	X	X	X	X	X	X	Roadway rehab with improvements for bike, ped transit, landscaping and gateway	Not funded Measure G match	2016	$1,000
Hwy 255 at 101 Roundabouts	ST	X	X	X	X		X	Convert clover leaf intersection to 2 roundabouts, ped-bike access across bridge (non-existent), add transit park-and-ride, remove 1 mile paved roadway (mitigation)	Not funded	2018-20	$2,000
Hwy 101 at Sunset and L.K Wood Blvd Roundabout	ST	X			X	X	X	Convert 5-way intersection to roundabout and create safer segregated bike/ped facilities	Not funded City match	2018-20	$650
Guintoli Lane–Hwy 299 intersections, Valley West and Valley East to West End Rd	ST	X	X			X	X	Rehab, restripe and improve LOS (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	$8,000
								**Assumes 50% Measure G match + 50% grant funds*	*Arcata ST Subtotal*		*17,300*
									Arcata LT Subtotal		*$ -*

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)
[1] Short-term (ST) is the next 1 to 10 years; long-term (LT) is the next 11 to 20 years. [2] Assume 3% annual inflation.											
Agency: City of Blue Lake											
South Railroad Ave from Chartin Way to Broderick Ln	ST	X	X	X		X	X	Repave and add pedestrian improvements "Annie and Mary" Trail, rehab and reconstruction	Not funded	2018/19	$2,000
Greenwood Rd/Railroad Ave/Hatchery Rd, from Blue Lake Blvd to Mad River Bridge	ST	X	X			X	X	Overlay and pedestrian improvements, rehab and reconstruction	Not funded	2016/17	$3,000
Hartman Lane/G Street, from Blue Lake Blvd. to Railroad Ave.	ST	X	X			X	X	Rehab and reconstruct with ped improvements	Not funded	2020/21	$1,400
I Street, from Blue Lake Blvd. to First Avenue	LT	X	X			X	X	Rehab and reconstruct with ped improvements	Not funded	2023/24	$1,200
Annie and Mary Trail, from Chartin Road to City Limits	LT	X	X	X			X	Rail/trail	Not funded	2023/24	$1,500
									Blue Lake ST Subtotal		*$6,400*
									Blue Lake LT Subtotal		*$ 2,700*
Agency: City of Eureka											
Harrison Ave from Harris St to Myrtle Ave	ST	X	X	X	X	X	X	TWLTL, bike lanes, bus pullouts	Not funded	TBD	$2,000
Harris St from H St to J St	LT		X		X	X	X	Signalization and signalization modifications	Not funded	TBD	$700
Henderson St from I St to S St	LT	X	X	X	X	X	X	Convert to one-way street, install bike facility, bus pullout	Not funded	TBD	$500
Myrtle Ave from 5th St to Harrison Ave	LT	X	X	X	X	X	X	Congestion relief, ADA, bike facility	Not funded	TBD	$500
South Gateway of Eureka	ST		X	X			X	Beautification and traffic calming	Not funded	TBD	$1,688
Waterfront Dr from G St to J St	ST	X	X		X		X	Connection Phase 2	STIP	2015/16	$4,059

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)
Eureka Waterfront Trail from Del Norte to Truesdale St (Phase A)	ST		X	X			X	Class I multi-use trail	Non-Freeway Funds (ENFY)	2015/16	$1,450
Waterfront Trail from Del Norte to C St (Phase B)	ST		X	X			X	Class I multi-use trail	Partially funded, TE reserve	2015/16	$100
Waterfront Trail Adorni to Tydd (Phase C)	ST		X	X			X	Class I multi-use trail	Partially funded, TE reserve		
Hawthorn St from Broadway to Felt, Felt St from Hawthorn to Del Norte, and 14th St from M St to West Ave	ST	X	X			X	X	Road rehabilitation, ADA, bicycle facility	STIP	2014/15	$400
Highland Ave from Broadway to Utah St and Koster St from Del Norte to Washington St	ST		X			X	X	Road rehabilitation, ADA	STIP	2014/15	$400
3rd St from L St to R St and Glen St from Harris St to Allard St	ST	X	X			X	X	Road rehabilitation, ADA, bicycle facility	Not funded	TBD	$200
6th St from I St to Myrtle Ave, and 7th St from Broadway to J St	ST	X	X	X	X	X	X	Road rehabilitation, ADA, bike lanes, bus pullouts	Not funded	TBD	$500
H St from 7th St to Harris St	ST	X	X	X	X	X	X	Road rehab, ADA and bus pullouts	Not funded	TBD	$700
City-wide	LT				X	X	X	Improve transit stop pullouts	Not funded	TBD	$500
Walnut Dr at Hemlock St	LT				X	X	X	Traffic signalization	Not funded	TBD	$300
City-wide	LT			X	X	X	X	Bicycle facilities per Humboldt Regional Bicycle Plan 2012	Not funded	TBD	$3,239
6th, 7th, and Henderson Streets	LT		X	X		X	X	Pedestrian improvements per Humboldt Regional Pedestrian Plan 2008	Not funded	TBD	$165
									Eureka ST Subtotal		*$11,497*
									Eureka LT Subtotal		*$ 5,904*

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	2013-16	$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	*$51,500*
Agency: City of Ferndale											
Rose Ave/Herbert St - East City limits to Main St	ST	X					X	Class II bike path	Not funded	2019	$24
5th St - Van Ness Ave to Ocean Ave	ST	X					X	Class II bike path	Not funded	2019	$15
Arlington Ave–5th St 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 Rd–Ocean Ave to south City limits	ST	X					X	Class III bike path	Not funded	2017	$1
Main St–Ocean Ave to north City limits	ST	X					X	Class III bike path	Not funded	2017	$38
Van Ness Ave–5th St to Main St	ST	X					X	Class III bike path	Not funded	2017	$1

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)
Shaw Ave–Ocean Ave to Berding St	ST	X					X	Class III bike path	Not funded	2017	$ 37
Ocean Ave–Strawberry Ln heading east towards trailhead	ST	X	X				X	Multipurpose trail (Class 1 bike path)	Not funded	2018	$36
5th St–Van Ness Ave to Ocean Ave	ST	X	X				X	Multipurpose trail (Class 1 bike path)	Not funded	2018	$174
Lincoln St–Grant Ave to East City limits	ST	X	X				X	Multipurpose trail (Class 1 bike path)	Not funded	2018	$12
Ocean Ave –Craig St to Russ Park trailhead	ST	X	X				X	New sidewalk	Not funded	2016	$98
5th St–Arlington Ave to Fairview North and piece on Arlington Ave	ST	X	X				X	Curb and gutter and new sidewalk	Not funded	2015	$54
Berding St–Rose Ave to Lewis St	ST	X	X				X	New sidewalk (Ped 2)	STIP/TE	2013	$50
Rose Ave–Berding to Herbert St	ST	X	X				X	New sidewalk (Ped 2)	STIP/TE	2013	$147
Main St–North City limits to Arlington Ave; citywide	ST	X	X				X	Misc. ADA improvements	Not funded	2015	$150
Main St–Arlington Ave to Ocean Ave (Caltrans)	ST	X	X				X	Misc. ADA improvements		2014	$600
Francis St–Ocean Ave to Ferndale Public Works Bldg	ST	X	X			X		Roadway rehabilitation	Not funded	2016	$80
Berding St–Herbert St to Eugene	ST	X	X			X		Roadway rehabilitation	Not funded	2015	$1,400
Deferred Maintenance	LT					X		Misc. roadway maintenance	Not funded	TBD	$3,291
									Ferndale ST Subtotal		*$2959*
									Ferndale LT Subtotal		*$3,291*

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											
Ross Hill Road, Kenmar to School Street	ST	X	X	X	X		X	Pedestrian and bike safety improvements	Not funded	2015/16	$800
Rohnerville Road, Redwood Way to Jordan Street	ST	X	X	X	X	X	X	Reconstruct w/sidewalk and bike lanes	STIP	2014/15	$1,041
Rohnerville Road, Newell St. to Redwood Way	ST	X	X	X	X	X	X	Reconstruct w/ sidewalk and bike lanes	Not funded	2018/19	$3,000
Fortuna Boulevard, Redwood Way to Kenmar Road	ST	X	X	X	X	X	X	Overlay w/ bike lane improvements	Not funded	2017/18	$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	$1,000
12th Street–Riverwalk Drive/US 101 South Onramps, Dinsmore Drive	LT	X	X	X	X		X	Reconfigure intersection to accommodate increased traffic, ped and bike demand.	Not funded	TBD	$1,500
Newburg Road and 12th Street/NB 101 ramps realignment	LT	X	X	X	X		X	Reconfigure intersection to accommodate increased traffic, ped and bike demand.	Not funded	TBD	$1,500
									Fortuna ST Subtotal		*$7,841*
									Fortuna LT Subtotal		*$3,000*
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 to increase safety.	State Transp. Enhancement	2013	$589

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)
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 Avenue.	State Safe Routes to Schools	2013/14	$152
Wildwood Avenue, Elko St. to Belleview Ave.	ST	X	X		X	X	X	Class III bike lanes including striping and signage.	Not funded	2013/14	$35
Rigby Ave., Davis St. to Center St.	ST	X	X	X			X	Maintenance paving and bike improvements, Class II bike lane, centerline stripe.	Not funded	2013/14	$104
Wildwood Avenue at Intersection with Hwy 101 off-ramp	ST		X	X		X	X	Re-alignment of southbound off-ramp and pavement replacement between Caltrans paving project and City of Rio Dell project on Wildwood Ave.	Not funded	2014/15	$135
Davis Street, Between Wildwood Ave. and Rigby Ave.	ST	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 bike lanes from Ireland St. to Wildwood Ave.	Not funded	2014/15	$53
1st Avenue and 2nd Avenue, from Elko St. to Columbus St.	ST		X					Signage and striping to accommodate emergency response vehicles.	Not funded	2014/15	$44
Belleview Avenue, Wildwood Ave to River Street	ST	X	X				X	Class II bike lanes, signage and centerline striping.	Not funded	2014/15	$69
2nd Ave., Davis St. to Columbus St.	ST		X	X				Maintenance paving project including 2" overlay and striping	Not funded	2014/15	$106
Ogle Avenue, River Street to Creek Street	ST	X	X	X	X		X	Road reconstruction and drainage improvements	Not funded	2015/16	$3,303

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)
Monument Road, Dinsmore Ranch Rd to Redwood Lane	ST				X		X	Drainage improvements including new inlets, valley gutter, ditch and storm piping	Not funded	2016/17	$149
Riverside Dr., Eagle Prairie Rd. to Fern St.	ST		X	X				Maintenance paving project including 2" overlay and striping	Not funded	2016/17	$156
Northwestern Ave, east entrance to Eel River Industries to cul-de-sac at Humboldt County right-of-way	ST	X	X		X	X		Centerline and edge striping from Eel River Industries to Metropolitan Heights Rd. Edge stripe from Metropolitan Heights Rd. to cul-de-sac at County right-of-way. Centerline monument	Not funded	2017/18	$55
Ireland Ave., Davis St. to Painter St. and Dixie St., 4th Ave. to Davis St.	ST	X	X	X	X		X	Maintenance paving project, including 2" overlay and striping, including bikeway signage	Not funded	2017/18	$19
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				Maintenance paving project, including 2" overlay and striping.	Not funded	2019/20	$112
Elm St., Pacific To Wildwood Ave. Orchard Pl., Cherry Ln. to Orchard St. Cedar St., Pacific Ave. to Wildwood Ave. View St., Douglas St. to Kelly St.	ST			X				Maintenance paving project, including 2" overlay and striping.	Not funded	2019/20	$109
W. Painter St., Pacific Ave to 50' west of Rio Dell Ave. Butcher St., Pacific Ave. to Rio Dell Ave. Rio Dell Ave., W. Center St. to Townsend St. W. Townsend St., Rio Dell Ave. to Pacific Ave.	ST			X				Maintenance paving project, including 2" overlay and striping	Not funded	2019/20	$95

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)
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	*$3,341*
Agency: Karuk Tribe											
Karuk Tribe/County: Red Cap Road, Orleans- *see under County projects.*											
Karuk Tribe/Caltrans: SR 96, Orleans	LT	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 Road to Asip Road	LT	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		
									Karuk Tribe LT Subtotal		*$2,500*
Agency: City of Trinidad											
Van Wycke Street Trail	ST	X	X	X	X		X	Reconstruction, lights	Not funded	2016/17	$372
Trinity Street	ST	X	X	X			X	Sidewalks, driveways & curb ramps	Not funded	2018/19	$377

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)
Patrick's Point Drive/Scenic Drive	ST	X	X	X			X	Sidewalks, driveways & curb ramps	Not funded	2020/21	$191
Patrick's Point Drive	ST		X			X		Overlay/maintenance paving	Not funded	2021/22	$127
Main St, Trinity St, Westhaven Drive	LT		X			X		Overlay/maintenance paving	Not funded	2022/23	$561
Edwards Street	LT		X			X		Overlay/maintenance paving	Not funded	2024/25	$415
Frontage Road	LT					X		Overlay/maintenance paving	Not funded	2026/27	$323
Parker Creek Drive	LT					X		Reconstruction	Not funded	2027/28	$159
Edwards Street	LT	X	X	X			X	Sidewalks, driveways & curb ramps	Not funded	2028/29	$514
									Trinidad ST Subtotal		*$1,067*
									Trinidad LT Subtotal		*$1,972*
Agency: County of Humboldt											
Myrtle, Lucas, Harris, Eureka	ST	X		X	X		X	Sidewalk infilling	STIP	2014	$580
Myrtle Avenue, Freshwater	ST	X		X	X		X	Bicycle lane improvements – Pigeon Point to Mitchell	BTA	2013	$200
Central Avenue, McKinleyville	ST	X			X		X	Central Avenue median installation–School to Hiller	HSIP	2014	$700
Walnut & Fern Street, Cutten	ST	X		X	X		X	Traffic signal installation	STIP	2015	$400
Honeydew Bridge	ST	X	X	X	X	X	X	Replace existing bridge	HBP	2014	$6,200
Redway	ST	X		X	X		X	Pedestrian safety improvements	TE	2013	$450
School Road, McKinleyville	ST	X		X	X		X	Sidewalks–Salmon to Fischer	TE	2013	$650

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)
School Road, McKinleyville	ST	X	X	X	X	X	X	Sidewalks & bike lanes w/ roundabout Washington to Salmon	Prop 1B & Developer	2013	$1,400
Briceland Thorne Road	ST				X		X	Curve correction	HRRR	2013	$800
Oak & F Street, Eureka	ST	X		X	X		X	Sidewalks, speed table crosswalk, center median haven	SR2S	2013	$350
Murray Road, McKinleyville	ST	X		X			X	Sidewalks, bulbouts, center median haven	SR2S	2013	$100
Union Street	ST	X	X	X	X	X	X	Shoulder widening & geometric improvements	STIP	2013/14	$2,881
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	$900
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	$500
Bald Hills Road	LT		X	X	X			Pave Surface	Not funded	TBD	$6,000
New Navy Base Road	LT	X	X	X	X	X	X	Reconstruct from SR 255 to Bay	Not funded	TBD	$1,500
Myrtle Avenue at Freshwater Road	ST	X		X	X		X	Traffic Circle	Not funded	TBD	$900
Central Avenue, McKinleyville	ST	X		X	X		X	Shoulder widening	Not funded	TBD	$800

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)
Central Avenue, McKinleyville	ST		X	X	X		X	Synchronize traffic signals	Not funded	TBD	$800
Hammond Trail Bridge–Mad River	ST	X		X	X	X	X	Replace existing bridge	Not funded	TBD	$3,200
Glendale Drive, Blue Lake	ST	X		X	X		X	Construct Class I trail	Not funded	TBD	$2,000
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
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 improve	Not funded	TBD	$10,000
Fern Street, Cutten	LT	X	X	X	X		X	Complete connection	Not funded	TBD	$1,000
Red Cap Road SR 96 to Shivshaneen Road, Orleans (with Karuk Tribe)	ST	X	X		X	X	X	Shoulder widening, ped-bike improvements	TE, HBP, Tribal FHWA, TTP	2014/15	$1,600
Garberville	ST	X	X		X	X	X	Context sensitive modifications	Not funded	TBD	$1,500
Hoopa Downtown Corridor Project	ST	X			X	X	X	Context sensitive modifications (County portion only)	Not funded	TBD	$250
									Humboldt Co. ST Subtotal		*$27,661+*
									Humboldt Co. LT Subtotal		*$134,400+*

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											
101 Corridor Improvement Project	ST	X	X	X	X	X	X	Safety improvements at uncontrolled intersections	RTIP ITIP	2017/18 2017/18	$28,380 $15,000
U.S. Highway 101 / Broadway, Kmart to O Street	ST	X				X	X	ADA curb returns and ramp upgrades	2016 SHOPP	2018	$3,000
101–In Arcata from 11th Street Overcross to the Arcata Overhead	ST						X	Install cable median barrier	2013 SHOPP	2013	$ 1,000
101–From Arcata Slough Bridge to Arcata Overhead	ST	X	X	X	X	X	X	Eureka/Arcata CAPM and restripe	2012 SHOPP	2013	$14,000
101–Various locations from Westhaven Dr. to Trinidad Rd.	ST					X	X	Humboldt 101 seismic retrofit	2013 SHOPP	2014	$4,000
101–Near Rio Dell from Eel River Bridge to S. of Van Duzen Bridge	ST						X	Median barrier installation	2013 SHOPP	2014	$ 1,000
101–Near Garberville near Richardson Grove	ST		X		X		X	STAA Operational Improvement Project	2011 SHOPP	TBD	$5,500
City of Fortuna Maintenance Station	ST		X		X		X	Excavate contaminated material	2014 SHOPP	2015	$2,000
299–Near Willow Creek on Cedar Creek Road	ST				X	X	X	Cedar Gap curve improvement	2014 SHOPP	2012	$1,000
299–Near Blue Lake near Bair Rd	ST				X	X	X	Acorn curve improvement	2014 SHOPP	2015	$3,000
299–Near Willow Creek near Redwood Creek Bridge	ST				X	X	X	Sabertooth shoulder widening	2016 SHOPP	2017	$2,000
299–Near Willow Creek near Chezem Road	ST				X	X	X	Circle Point curve improvement	2014 SHOPP	2016	$4,000
299–near Blue Lake, Chezem Road	ST				X	X	X	Lupton curve improvement	2015 SHOPP	2016	$2,000
299–Near Blue Lake at Mill Creek Bridge	ST			X				Mad River fish passage mitigation	2012 SHOPP	2013	$1,000

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)
299–Near Blue Lake at Chezem Road	ST				X	X	X	Green point sink restoration	2012 SHOPP	2014	$9,000
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	$3,000
96–Near Willow Creek near Shoemaker Road	ST				X	X	X	Hoopa Vista Point curve correction	2012 SHOPP	2017	$2,000
96–In Hoopa from Loop Road near Hostler Creek Bridge	ST	X	X		X		X	Shoulder widen and lighted crosswalk	2012 SHOPP	2016	$1,000
96–Downtown Hoopa	ST	X	X	X	X		X	Pedestrian safety, traffic calming, drainage improvements	Partially funded	2013-16	$4,400
255–Near Arcata at McDaniel Slough Bridge	ST			X			X	Mad River wetland mitigation	2012 SHOPP	2015	$1,000
169–East of Pecwan near Junction of Highways 96 / 169	ST				X	X	X	Weitchpec curve improvement	2016 SHOPP	2017	$1,000
169–Various Locations	ST				X		X	Widening and metal beam guardrail	2012 SHOPP	2015	$6,000
36–At Carlotta from Wilson Lane to 0.5 W of Cummings Creek Rd.	ST				X	X	X	Carlotta left turn channelization	2012 SHOPP	2014	$9,000
254–Various Locations	ST				X	X	X	Avenue of the Giants - Four Bridges Project	2012 SHOPP	2016	$6,000
101–South Fork Eel River Bridge	ST				X	X	X	Eel River Bridges seismic retrofit	SHOPP	2015	
101–In Trinidad between 6th Street and Trinidad Road Exit	ST		X		X		X	New interchange	STIP (PID)	TBD	$18,000
96–Trinity River Bridge in Downtown Hoopa	ST	X	X	X	X	X	X	Pedestrian and non-motorized vehicle crossing of Trinity River	SHOPP (PID)	TBD	$1,000

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)
101–Intersection of Broadway, Wabash and Hawthorne	ST	X	X		X	X	X	Intersection control evaluation	SHOPP (PID)	TBD	$3,000
101–In Eureka south of Fields Landing OH to North of Herrick Avenue OC	ST				X	X	X	Pavement preservation	SHOPP (PID)	TBD	
101–Eureka on 4th and 5th Streets from Broadway to Eureka Slough Bridge	ST	X	X		X	X	X	Eureka capital preventative maintenance (CAPM)	SHOPP (PID)	TBD	
101–Near Orick North of Big Lagoon	ST				X	X	X	Orick capital preventative maintenance (CAPM)	SHOPP (PID)	TBD	
101–Near Blue Lake at Various Locations from Lupton Creek to Berry Summitt	ST				X	X	X	Slope repair and drainage improvements	SHOPP (PID)	TBD	
101–Near Blue Lake from Titlow Hill Road to Willow Creek	ST				X	X	X	Humboldt 299 capital preventative maintenance (CAPM)	SHOPP (PID)	TBD	
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 (OGFC)	SHOPP	2016	$3,700
101 and 254–Various locations in Humboldt County	ST				X		X	Upgrade guardrail and bridge approach	SHOPP	TBD	$4,000
101, 169, and 199–Various locations	ST				X			Metal beam guard rail (MBGR) follow-up	SHOPP	2014	$3,000
101–Upgrade Bridges (2 Humboldt County Bridges)	ST				X	X	X	Bridge seismic retrofit	SHOPP	2014	
36–Hely Creek, Little Larabee Creek and Butte Creek	ST				X		X	Bridge rail replacement and Upgrade	Not Funded	NA	$1,000
36 - Little Golden Gate, approx 15m E of Carlotta	ST			X	X		X	Install erosion control measures	Not Funded	NA	$2,000
36–Near Hydesville at River Bar Road	ST				X	X	X	Alton shoulder widening	SHOPP (PID)	TBD	
101 - Between Eureka and Arcata	ST				X		X	Metal beam guard rail (MBGR) follow-up to previous locations	Not Funded SHOPP	2014	$2,000

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)
299, 96 - Near willow Creek; 36–From Carlotta to Hydesville	ST				X		X	Metal beam guard rail (MBGR) follow up to previous locations	SHOPP	TBD	$2,000
101–Williford Rd. Undercrossing	ST				X	X	X	Replace superstructure	SHOPP	2015	$2,000
101–Through the community of Orick	LT	X	X		X		X	Streetscape improvements to enhance bicycle and pedestrian safety	Not funded	TBD	$ 1,400
96–Through the community of Orleans	LT	X	X		X		X	Streetscape improvements to enhance bicycle and pedestrian safety	Not funded	TBD	$1,800
255–Through the community of Manila	LT	X	X	X	X		X	Streetscape improvements to enhance bicycle and pedestrian safety	Not funded	TBD	$ 2,200
										Caltrans ST Subtotal	*$191,980*
										Caltrans LT Subtotal	*$5,400*
										Regional Projects–**Funded (constrained) Subtotal**	**$239,274+**
										Regional Projects–**Not funded (unconstrained) Subtotal**	**$275,426+**

[1] Short-term (ST) is the next 1 to 10 years; long-term (LT) is the next 11 to 20 years.
[2] Assume 3% annual inflation.

APPENDIX II

AIRPORT GROUND ACCESS IMPROVEMENT PROGRAM

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 fits the two conditions that require this program: 1) The California Redwood Coast–Humboldt County Airport (formerly the Arcata-Eureka Airport) is a primary air carrier airport within HCAOG's planning area; and 2) HCAOG is updating its regional transportation plan.

An airport is a primary air carrier if it has annual enplanements over 10,000. California Redwood Coast-Humboldt County Airport (ACV) had 61,705 enplanements in 2012 (70,455 in 2011). Therefore, HCAOG must include an airport ground access improvement program (AGAIP) in conjunction with preparing an updated regional transportation plan (California Government Code §65081.1(a)). HCAOG's past RTP updates have not included an AGAIP.

California law (§65081.1) further 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 is relying on the "Airport Ground Access Planning Guide," (Guide) to prepare this initial 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. This AGAIP defines the problem (step one), which is described below under "ACV's Dominant Policy Issues," and identifies preliminary concepts for solving the problem. 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 Draft RTP Update (2014), "*VROOM*," states the goal and objectives for the region's transportation system:

> **Overall Goal**: HCAOG's 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 or business/industry, and society at large.
>
> **Overall Objective:** Program all 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 pursues six main objectives/planning priorities for planning projects and programs (in alphabetical order):
>
> - Balanced Mode Share/Complete Streets
> - Economic Vitality
> - Efficient & Viable Transportation System
> - Environmental Stewardship
> - Equitable & Sustainable Use of Resources
> - Safety

Federal "Moving Ahead for Progress in the 21st Century Act" (MAP-21)

The federal transportation bill passed in 2012, MAP-21, supports a national intermodal transportation system. 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

There 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 consulted with the Humboldt County Aviation Advisory Committee and County Aviation Division staff to identify ACV's dominant policy issue(s).[1] They confirmed that this comment in the FHWA-FAA Guide does apply: "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. Ground access to ACV is via Airport Road, which is between a major arterial road (Central Avenue) and a US 101 highway interchange. There is no crosswalk at either intersection or at the airport entrance (intersection of Airport Road and Airport Loop 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 sidewalk/trail or curb. Airport Road has striped shoulders, but no designated bikeway. Airport Loop Road has neither sidewalk nor bikeways for access between Airport Road and the terminal.

A McKinleyville resident wrote to HCAOG, during the RTP Update process, to give input regarding access to ACV. His concerns mirror what the Aviation Advisory Committee and County staff said. He wrote,

> There is no pedestrian access from ACV to Airport Road. A few of us who live locally, walk to and from the airport, especially when renting cars. There is a worn

[1] Discussions during Humboldt County Aviation Advisory Committee's regular monthly meetings, May and June, 2014.

path on the SW side that goes to the fence line. To get there, one needs to walk on the entrance road with a blind curb.[2]

The HCAAC has identified possible projects to improve pedestrian and bicycle access to the airport. Preliminary ideas are:

- install sidewalk on Airport Road;
- install a pedestrian crosswalk at Airport Road and Airport Loop Road;
- improve the walkway from the Airport Business Park (Concorde Drive and Boeing Avenue) to the airport (Airport Road);
- improve walkways from Airport Road to the terminal;
- provide covered walkways to terminal (within airport grounds);
- provide an overhang to cover passenger loading/unloading zone; and
- install bicycle lockers.

This is not an exhaustive list and ideas are listed in no particular order. These ideas are concepts only and need further study to determine if they are feasible.

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).[3] 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

[2] E-mail from M. Schaffner to O. Smith (HCAOG), dated December 6, 2013.

[3] Developed by Boston Central Transportation Planning staff based on information from a 1987 Air Passenger Survey. (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.

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.

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