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## Chapter 7. Circulation Element

### 7.1 Purpose

This chapter describes the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local transportation facilities. It includes consideration of roads, public transportation, bicycle and pedestrian travel, airports, and marine and rail transportation.

### 7.2 Relationship to Other Elements

The goals and policies in this Element are directly correlated with that of the Land Use Element and Housing Element so that new and existing development will be adequately served by the transportation system, and will not interfere with existing or planned improvements. Transportation policies in this Element are also closely related to policies in the Energy Element and the Air Quality Element to minimize energy costs and air quality impacts. This Element is also directly related to the Community Infrastructure and Services Element, which contains policies regarding infrastructure financing and level-of-service standards. The Noise Element and Safety Element also include policies and standards to address airport noise and safety issues. The requirements set forth in the Land Use Element and Safety Element also reflect the residential densities allowed near airports.

### 7.3 Background

#### Circulation and Land Use

Coordinating land use and circulation decisions is necessary to achieve many of the goals of this Plan. For example, adequate roads and safe bicycle and pedestrian routes within Urban Development Areas are essential to accommodate growth. If circulation problems are fixed and improvements are made as development occurs, growth can be accommodated without creating traffic and traffic safety problems for existing residents. Land use planning must also complement transportation planning by locating uses in areas that can be cost effectively served and conditioning projects to mitigate impacts.

Synchronizing the County's efforts with local cities, California Department of Transportation (Caltrans), Native American Tribes, and the on-going transportation planning of the regional Humboldt County Association of Governments (HCAOG) is a high priority of this Plan. The best results will be achieved through seamless coordination between all the land use and transportation service and planning agencies in the County. The Caltrans, City of Eureka, and County partnership to use the Greater Eureka Area Travel Model (GEATM) as a joint-agency planning and decision-making tool is a good example of interagency coordination. Another good example is the recent grant

funding proposal for a \$50 million regional trails system put together by the Redwood Community Action Agency; Humboldt County; the cities of Eureka, Arcata, Blue Lake, and Rio Dell; Caltrans; and the Hoopa and Karuk Tribes.

### Roadway Infrastructure

The roadway network in Humboldt County includes 1,400 miles of County maintained roads and city streets, 378 miles of state highways (including U.S. Highway 101), and numerous roadways on federal lands. These roadways provide for the movement of goods and people on California’s north coast. The Humboldt County–maintained roadway system is made up primarily of two-lane roads that traverse varying degrees of flat, rolling, and mountainous terrain.

### Roadway Capacity

As the county’s population grows over the 20-year General Plan period, corresponding increases in vehicle volumes will have impacts on the safety and functionality of county roadways. As described in the Community Infrastructure and Services Technical Report, the GEATM model can be used to assess a roadway’s “level of service”—a qualitative measure of a roadways peak hour performance, where a letter grade from “A” to “F” is assigned as a measure of traffic congestion (see text box for additional information). In several cases in the Eureka area, roadways are already operating at or above capacity during peak hours.

The Community Infrastructure and Services Technical Report also identifies other roads currently able to accommodate existing traffic volumes, but that are expected to have segments that reach or exceed capacity as traffic volumes increase over the next 20 years. Addressing these capacity limitations is critical to the implementation of the General Plan.

<b>Level of Service</b>	
<p>Level of Service (LOS) is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. The quality of traffic operations is expressed in terms of LOS A (no congestion) through LOS F (extreme congestions). LOS definitions generally describe traffic conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Typically, level of service D is used as the design standard in urban areas and level of service C is used as the design standard in rural areas.</p>	
<b><u>LOS</u></b>	<b><u>Description</u></b>
A	Free-flowing conditions with no delay.
B	Free-flowing conditions; however, speed and maneuverability are slightly restricted due to the presence of other vehicles.
C	Stable traffic flow, with less freedom to select speed, change lanes, or pass. Some delay may be experienced.
D	A traffic stream approaching unstable flow, with reduced speed and maneuverability.
E	Unstable traffic flow with rapidly fluctuating speeds and flow rates.
F	Forced traffic flow, where speed and flow may drop to zero with high densities.

Roadway capacity is generally less of an issue for rural areas due to the lower population densities, but there are rural roadways where capacity and functionality must be addressed, especially to comply with Fire Safe—State Responsibility Area standards. Rural roadway capacity is usually limited by right-of-way width, lack of secondary roadway alternatives, roadway conditions, debris slides, and a lack of facilities for other transportation modes, including public transit, bicycles, and walking.

Several map series provide details of the County’s road system. Maps showing existing and planned future County roads and multimodal transportation facilities are shown in the Map Book Appendix, existing and future above-capacity road segments are in the Community Infrastructure and Services Technical Report, and maps showing the 2006 average daily traffic and level of service for the state highways in Humboldt County are in the *2006 Regional Transportation Plan* prepared by HCAOG (this mapping was not included in the 2008 RTP, which is the current plan).

<b>Roadways Expected to Have Traffic Increases of Greater Than 50%</b>	
<b><u>Street</u></b>	<b><u>Community</u></b>
Azalea Avenue	McKinleyville
Central Avenue	McKinleyville
Murray Road	McKinleyville
Sutter Road	McKinleyville
Redway Drive	Redway
Shelter Cove Road	Shelter Cove
Elk River Road	South Eureka
Hemlock Street	Cutten
Madison Street	South Eureka
Meyers Avenue	South Eureka
Ridgewood Drive	South Eureka
Walnut Drive	South Eureka
Westhaven Drive	Westhaven

Impacts of new development on the safety and capacity of the road network are currently assessed on a project-by-project basis. Developments are required to make on-site improvements to the road frontage and to provide safe access to the new development. The County has been unable to fund road construction to support new development and generally has not accepted privately constructed roads into its maintained road system. Instead, new roads constructed to County standards must be maintained by a Home Owner or Road Maintenance Association. Recently the County developed a “Permanent Road Division” Program that allows a private road to be accepted into the County system if the property owners pay an annual fee to cover the long-term maintenance costs of the road.

Funding improvements to solve area-wide capacity problems is one of the most significant Circulation Element implementation challenges. Designing the improvements, estimating costs, and apportioning costs on a fair share basis through fees or assessments will be necessary to address area-wide capacity limitations. If capacity limitations are not addressed, there will not be sufficient capacity to accommodate new development and individual projects will have difficulty gaining approval because of cumulative traffic impacts and neighborhood concerns.

**Roadway Maintenance**

Roadway maintenance is currently one of the more significant challenges facing the County. At present there is over \$100 million in deferred maintenance on the County’s major roadways, which does not include maintenance costs for local streets. Without significant increases in maintenance spending, roadway conditions will continue to decline and the costs of repair will escalate.

In 2000, Humboldt County's arterial and collector roadways were inspected and rated as part of the County's new Pavement Management System (PMS). This system relies on assessments of roadway condition and helps roadway maintenance managers identify thresholds for maintenance measures. The PMS generates pavement distress data for a representative sample of arterial and collector roadways in Humboldt County. This data forms the basis for the creation of an Overall Condition Index (OCI), which rates roadway surfaces on a scale from 0-100 as shown in Table 7-A.

OCI	Condition	Maintenance Typically Required for this Condition	Avg. Cost (\$/ft <sup>2</sup> )
70-100	Very Good	Minor (OCI 70-85)—Variable maintenance.	<\$0.4
50-69	Good	Chip Seal - Pavement sprayed with asphalt, covered with aggregate and rolled.	\$0.4
25-49	Poor	Overlay - An increase in the pavement load carrying capacity by adding additional pavement layers.	\$4
<25	Very Poor	Reconstruction - Complete removal and replacement of the existing pavement structure.	\$10

Source: Five Year Road and Bridge Capital Improvement Program, 2003.

The County is updating the five-year *Road and Bridge Capital Improvement Program* (CIP) for the years 2008-2012 to help guide the use of the County's transportation budget into the future. The County is also developing a list of road projects from its pavement management system that will determine future priorities for maintenance and rehabilitation of its roadways. The Community Infrastructure and Services Element contains policies to establish transportation system funding sources for both construction and maintenance that are intended to reduce the maintenance deficit over time.

### **Watershed Protection**

In response to the 1997 listing of Coho salmon as a threatened species, Humboldt County joined Del Norte, Mendocino, Trinity, and Siskiyou counties to form the Five Counties Salmonid Conservation Program (see the Water Resources Element for more discussion of the 5Cs program). This program works in a number of ways to protect salmon habitat, including the development of grading and road maintenance protocols.

In 2007, the National Marine Fisheries Service approved the *Five County Water Quality and Stream Habitat Protection Manual for County Road Maintenance*. Road maintenance activities carried out in accordance with the manual are considered to be adequate to protect threatened salmon and steelhead.

Greater emphasis must be placed on reducing sediment contributions from roads throughout the county to comply with the Clean Water Act's Total Maximum Daily Load targets and salmon recovery efforts. In addition, the Grading, Excavation, Erosion, and Sedimentation Control regulations (Title III, Land Use and Development, Division 3) contain requirements to reduce sediment transport off the site through the use of best management practices from sources such as the *State Water Resources Control Board Best Management Practices Construction Handbook*.

### **U.S. Highway 101 Safety Corridor Project**

Arguably the single largest transportation project with the most potential impact on Humboldt County residents during the timeframe of the General Plan is the Caltrans U.S. Highway 101 Safety Corridor Project between Arcata and Eureka. The *2007 Draft Environmental Impact Report* (DEIR) described the alternatives under consideration, and the preferred alternative involves constructing an overpass at the intersection of Indianola Cutoff and U.S. Highway 101.

Policies in this Element reflect the comments made on the DEIR by the Board of Supervisors on September 18, 2007 to request consideration of land use and a strategy that treats all three main roads between Arcata and Eureka as one system. The strategy would develop an overall improvement plan that phases improvements on a prioritized basis between the three roads: U.S. Highway 101, State Route 255, and Old Arcata Road/Myrtle Avenue.

### **Public Transportation**

Providing adequate public transportation to serve the needs of people who prefer or require public transportation for mobility is a priority of the Circulation Element. Increased use of public transportation will reduce air pollution, greenhouse gas emissions, traffic congestion, parking demand, energy consumption and the cost of personal transportation. The 2008 RTP contains a comprehensive description of public transit services of fixed and flexible route providers. The following fixed-route systems serve the county's public transit needs: Redwood Transit System, Eureka Transit System, Southern Humboldt Rural Transit System, Arcata & Mad River Transit System, Klamath/Trinity Non Emergency Transportation (K/T Net), and Blue Lake Rancheria.

Flexible route services are available through Dial-a-Ride/Dial-a-Lift, K/T Net Paraneet, Blue Lake Rancheria Dial-a-Ride, Fortuna Senior Transit, Humboldt Community Access and Resource Center, Bridgeville Community Center Van, Ferndale Senior Resource Transportation Network "Bridging the Gap," Coastline Enterprises, Humboldt County Mental Health, and United Indian Health Services, Inc.

Also described in the 2008 RTP are the services of Redwood Coast Transit (linking Crescent City and Humboldt County), Greyhound Bus Lines, AMTRAK, and City Cab.

The 2008 RTP identifies a 1-hour or less weekday service interval as the appropriate level of service for the urban areas of Eureka and Arcata, and an interval of 1.5 hours for the U.S. Highway 101 corridor between Trinidad and Scotia. This Element carries forward these public transit goals, policies, and implementation measures applicable to the unincorporated areas of the county.

## Bicycle and Pedestrian Travel

This Plan supports improvements that accommodate bicycles, pedestrians, and the mobility-challenged population. These improvements mostly include sidewalks, crosswalks, trails, and bicycle lanes. While walking or cycling between destinations is a choice for some, it is a necessity for others who do not have access to motorized transport. Development of bicycle and pedestrian facilities can reduce vehicle miles traveled, enhance communities, increase the opportunities for an active and therefore healthy lifestyle, and reduce greenhouse gas emissions.

Most facilities dedicated to bicycles and pedestrian are located in urban areas of the county; for example, the Hammond Trail in McKinleyville. In rural areas, pedestrians and bicyclists typically use County roads that lack sidewalks and bicycle lanes. Cyclists also use Caltrans-maintained state routes. Major new trails are in the planning stages along the Annie and Mary Rail Line from Arcata to Blue Lake, along U.S. Highway 101 between Arcata and Eureka, around Humboldt Bay. An ambitious new \$50 million grant proposal was recently submitted to the Federal Highway Administration to develop a regional trail system linking together these trails with others to the north in McKinleyville, to the south in Rio Dell, and greater Southern Humboldt, and to the east in Willow Creek, Hoopa Valley and the Klamath Valley.

The need for bicycle and pedestrian transportation facilities are assessed on a project-by-project basis. While the County uses LOS standards for determining impacts of new development to vehicle traffic, assessing needs and the impacts to bicycle and pedestrian facilities has been less standardized.

HCAOG's 2008 Humboldt County Regional Pedestrian Plan and the 2004 Regional Bicycle Transportation Plan Update are the latest assessments of pedestrian and bicycle conditions and needs in the County. Maps and descriptions of existing and proposed future non-motorized transportation facilities are shown in the Map Book Appendix.

The connection between public health and pedestrian and bicycle transportation is receiving increasing attention both locally and nationally as childhood obesity and other health problems related to a more sedentary lifestyle becomes epidemic in our population. A Health Impact Assessment (2008) of General Plan alternatives generally concludes that reductions in vehicle miles traveled and increases in walking and biking would yield significant public health benefits.

Access conditions for students walking and bicycling to and from county schools is a major concern especially at the elementary school level. Development of safe student access routes wherever children walk or bicycle to school is critical. "Walkability" audits have been used locally to identify problem areas and solutions. Caltrans administers a "Safe Routes to Schools" funding program, which has helped construct bicycle and pedestrian facilities in Humboldt County and can be a funding source in the future. This Element includes a policy to encourage coordination between school districts and the County on this important issue.

## Truck Transportation

The primary routes into and out of the county used by commercial trucks are U.S. Highway 101 and State Route 299. These major highways provide many trucks adequate facilities and level of service for their operations. However, narrow, winding sections of these highways legally prevent larger trailers from entering the county, which increases shipping costs for both imported and exported goods.

Improvements to the road alignment of U.S. Highway 101 through Richardson Grove south of Garberville, combined with recent state regulatory reforms, may eliminate the constraint on large truck access. This would reduce costs of shipping and may help local businesses become more profitable. Future improvements to State Route 299 in the Buckhorn Summit area of Trinity County could provide trucks with larger trailers access from the east.

The benefits to existing businesses are significant and large truck access is critical to new business development, especially marine industrial use of Humboldt Bay. The shrinking nation-wide fleet of smaller trailers that are legally allowed access to Humboldt will make these improvements a necessity over time.

### **2008 General Plan Update Health Impact Assessment Safe and Healthy Transportation Indicators:**

- Average vehicle miles traveled by Humboldt residents per day
- Average minutes traveled to work by zip code
- Proportion of commute trips made by public transit
- Proportion of households with 1/4-mile access to local bus service
- Proportion of average income spent on transportation expenses
- Ratio of miles of bike lanes/ pedestrian facilities to road miles
- Proportion of commute trips and trips to school made by walking or biking
- Number and rate of bicycle/pedestrian injury collisions
- Proportion of population living on residential streets with speed limits greater than 35 mph.
- Percent of population who have access to pedestrian facilities.

## Air Transportation

The Arcata-Eureka Airport located in McKinleyville is the county’s sole commercial airport. Maintaining a wide selection of carrier, flight, and destination options is a high priority of this Element. Given the County’s remote location, providing convenient travel connections to urban centers is an important quality of life amenity and essential to maintain Humboldt’s connections to the world economy.

With the exception of Shelter Cove and Hoopa, airports in the unincorporated areas are managed by the Aviation and Airport Division of the County Public Works Department and operated according to Airport Master Plans. Airport Land Use Compatibility Plans have been prepared for the county operated Arcata-Eureka, Dinsmore, Garberville, Kneeland, Murray Field, and Rohnerville airport, and include maps that display “Land Use Compatibility Zones.” These zones restrict the allowed uses and residential densities in areas that would impact aircraft operations. The Airport Land Use Compatibility Plan also contains policies and criteria that regulate allowed uses and residential densities around the Hoopa and Shelter Cove airports.

<u>Airport</u>	<u>Runway Length (ft)</u>
Arcata-Eureka Airport	5,998 and 4,499
Dinsmore Airport	2,510
Eureka Municipal Airport	2,700
Garberville Airport	3,050
Hoopa Airport	2,325
Kneeland Airport	2,270
Murray Field	3,000
Rohnerville Airport	4,005
Shelter Cove Airport	3,400

## Marine Transportation

The Port of Humboldt Bay is a key fixture of the local economy. Shipped commodities passing through Humboldt Bay include petroleum products (gasoline and fuel oil), wood chips, logs, lumber, and paper pulp. Forest products remain the highest volume marine shipments passing through Humboldt Bay. The marine export of forest products has fluctuated over the years based on supply and demand and competition with trucking options. Occasionally whole logs are imported through Humboldt Bay as feed stock for local mills.

The marine transport of goods has been affected by changes in the shipping industry. Larger deep-draft vessels are becoming more common for moving cargo along Pacific Ocean shipping lanes. These vessels have higher cargo capacities and require deeper and wider channels and turning basins. In response to this need, the Humboldt Bay Harbor District and the U.S. Army Corps of Engineers completed a project in 2000 to deepen the Bar, Entrance, North Bay, and Samoa channels and widen the Entrance Channel. The Bar and Entrance channels have been deepened to a depth of 48 feet, and the North Bay and Samoa Channels deepened to a depth of 38 feet. In addition, the Harbor District has been working with members of Congress and the U.S. Army Corps of Engineers to develop a companion project that would deepen and widen the Fields Landing Channel.

The 2003 Harbor Revitalization Plan, prepared jointly by the Humboldt Bay Harbor District, City of Eureka, and County to encourage the economic development potential of the Port, focuses on improvements to marine facilities, landside access, diversification

opportunities, and marketing. Significant new opportunities were identified for Humboldt Bay, including marine-dependent industrial projects, niche dry and liquid bulk cargoes, and the potential for tourism and marine science development. Opportunities for expansion or continuation of existing aquaculture and commercial fishing operations were also identified. The growth of Humboldt Bay's marine transport industry is linked to growth in the truck and rail transportation modes. All dock facilities have railroad spurs that connect to the main North Coast Railroad Authority facilities. Due to the current condition of railroad operations, goods loaded on and off of commercial vessels calling on Humboldt Bay are transported to and from the dock facilities by truck.

## Rail Transportation

Rail service on the North Coast has a long history. Railroads were introduced to Humboldt County in the late 1800s by timber companies to carry logs from the forest to the mills. Eureka and San Francisco were connected by rail in 1914. Private carriers offered varying degrees of passenger and freight service along the line until the bankruptcy of Eureka Southern in 1986. In 1989 the California Legislature created the North Coast Railroad Authority (NCRA) in an effort to maintain rail service. In 1997, the rail line effectively ceased operation.

In the latter years of operation, it provided freight service to Humboldt County three days a week and occasional excursion passenger service on holidays. The principal freight was lumber transported to the California and Arizona markets. Additional traffic included dairy products, fish products, and aggregates. There was also some inbound traffic of coke and calcified lime used in pulp processing.

Future rail transportation in the County depends on demand for rail service relative to trucking and marine transportation and the availability of capital to rebuild the line and fund the operation. Based on the conclusions of The Long Term Financial and Economic Feasibility of the Northwestern Pacific Railroad (2003) a considerable program of roadbed, track, bridge and tunnel, and station rebuilding would be necessary if operations are to ever resume. Maintaining the line in an operational condition through the Eel River Canyon also represents a challenge due to geologic instability and environmental concerns. When the Southern Pacific Railroad entered abandonment proceedings for the line in 1982, they estimated that the Northwestern Pacific cost them 2 to 3 times their normalized maintenance costs for all other Southern Pacific railroads across the country. In terms of market potential, the report found the greatest opportunity for growth in rail related shipments in solid waste, aggregate, and port-related marine industrial activities.

A potential use of the northern most portion of the rail line considered in the 2002 Moving Goods and People Report would support tourism by developing an excursion train. The Northern Counties Logging Interpretive Association (NCLIA) seeks to create a logging and timber technology museum in Humboldt County, coupled with an operating steam-powered "Humboldt Bay Scenic Railroad" excursion train. This tourist railroad would operate from South Fork north to Samoa. The Humboldt Bay Trails Feasibility Study (2007) evaluated several options for using the railroad easement for a pedestrian and bike pathway between Eureka and Arcata.

The NCRA Board of Directors intends to focus on updating and implementing the adopted business plan and three major areas of future need:

- Executing public policy to protect the railroad as a public transportation asset and to promote its use.
- Oversee the financial accounting and record keeping system through auditing and monitoring of all systems.
- Pursue new funding sources and new legislation, as well as continuing management of grant funding from existing local, state, and federal sources to improve railroad infrastructure and operations.

The County has been involved in preliminary planning for a potential trail that would connect Arcata and Eureka that could include the NCRA right-of-way. There are many examples of successful rails with trails project that are in operation across the United States and the Federal Highway Administration has published a document entitled *Rails with Trails—Lessons Learned*, which includes a wealth of information regarding the safety of bicycle and pedestrian pathways along rail lines around the country. Consideration should be given to the use of rails with trails as a means to preserve the rail corridor between Eureka and Arcata for future rail use.

## 7.4 Goals and Policies

### Goals

- C-G1. Circulation System Safety and Functionality.** A circulation system that is safe, efficient, and provides good access to all cities, communities, neighborhoods, recreational facilities, and adjoining regions.
- C-G2. Balanced Transportation Opportunities.** A transportation system that integrates and balances the needs of motorized vehicles, public transit, bicycles, and pedestrians.
- C-G3. Interagency Cooperation.** Coordinated planning between transportation system service providers and HCAOG for improved system design, development, operations, and maintenance.

### Policies

#### Circulation and Land Use

- C-P1. Orderly Development.** Encourage development of a road system that supports an orderly pattern of land use through:
  - A. Using minor collector roads to provide access to higher density residential areas, local commercial facilities, neighborhood parks, and schools.
  - B. Design access to residential areas to minimize disruptions to the flow of traffic on arterial or collector roads. Avoid, when feasible, direct residential driveway access off of arterials and (major) collectors.
  - C. Connectivity between neighborhoods and destinations.

- D. Locating retail, service and industrial facilities, community centers, major recreational facilities, employment centers, and other intensive land uses near major collectors or arterial roads.
  - E. Improving roads to accommodate existing land uses served by a sub-standard road classification.
- C-P2. Consideration of Land Uses in Transportation Decision Making.** Transportation decisions in urban and rural areas shall be based on a comprehensive planning approach that considers existing land uses and future land development as proposed in adopted County plans and plans of other governmental agencies.
- C-P3. Consideration of Transportation Impacts in Land Use Decision Making.** Decisions to change or expand the land use of a particular area shall include an analysis of the impacts to existing and proposed transportation facilities and services so as to minimize or avoid significant operational or economic consequences.
- C-P4. Mitigation Measures.** New development shall be conditioned to proportionally mitigate significant traffic impacts through construction of on- and off-site improvements and dedication of rights-of-way.
- C-P5. Level of Service Criteria.** The County shall endeavor to manage its streets and highway system so as to maintain Level of Service C operation on all roadway segments, except for any portion of U.S. 101, where Level of Service D shall be acceptable. Calculation of Level of Service shall be based upon V/C Ratios as described in C-S4, or other methods acceptable to Public Works. Cumulative impacts to levels of service shall also be considered in project review and addressed through the use of development impact fees.
- C-P6. Jurisdictional Coordination and Integration.** Use HCOAG, formal Memorandums of Understanding, and informal project level cooperation to integrate countywide land use and transportation planning and implementation efforts. Work towards adoption of consistent transportation standards and roadway functional classifications between jurisdictions and Caltrans.
- C-P7. Joint Use of Traffic Models.** Integrate transportation planning and analysis through joint use of area-wide traffic models such as the Greater Eureka Area Travel Model (GEATM). Support coordination with agencies to maintain the accuracy and utility of such models.
- C-P8. Coordination Between County Agencies.** County Public Works, Health and Human Services, and Community Development Services departments shall coordinate with each other to encourage uniform implementation of circulation policies.

## Roadway Infrastructure

- C-P9. Acceptance of Roads into the County Maintained Road System.** Roads whose alignments are part of the Circulation Element (generally arterial and collector roads) that are constructed to County standards approved by the Department of Public Works shall be recommended to the Board of Supervisors for inclusion into the County Maintained Road System. Roads that are constructed to County standards and approved by the Department of Public Works that are not a part of the Circulation Element, and are not arterial or collector roads, shall not be recommended for acceptance into the County Maintained Road System unless adequate funding for the future maintenance of the road and its associated facilities is provided, subject to approval of the Department of Public Works.
- C-P10. Right-of-Ways as Public Facilities.** Road and rail right-of-ways are hereby designated as Public Facilities (PF), as per the Land Use Element, whether or not specifically mapped.
- C-P11. Roadway Functional Classifications.** Adopt and consistently apply roadway design and right-of-way standards according to functional classifications that distinguish between the needs of Urban Development Areas and rural areas.
- C-P12. Level of Service Criteria.** The County shall specify and endeavor to maintain minimum Levels of Service (LOS) on County roads and use LOS criteria as a basis for analyzing impact fees and assessments, prioritizing congestion relief projects, and evaluating cumulative traffic impacts of discretionary development.
- C-P13. Prioritization of Investments.** Use objective criteria consistent with this Plan that can be applied uniformly and countywide to prioritize roadway capital and maintenance expenditures.
- C-P14. Efficiency and Capacity.** Manage roadway systems for increased transportation efficiency through multi-modal use and demand management before increasing capacity through roadway widening or new road construction.
- C-P15. Roadway Condition Thresholds.** Use objective roadway condition measures and thresholds to prioritize maintenance projects. Work to reduce overall deferred maintenance liability.
- C-P16. Public Input.** Public input shall be sought and considered in the development of the Capital Improvement Program.
- C-P17. U.S. Highway 101 Safety Corridor Improvements.** The County supports a strategy for improvements to the U.S. Highway 101 Safety Corridor that minimizes impacts to coastal resources, and treats all three main roads between Arcata and Eureka as one system. The strategy would develop an overall improvement plan considering motorized and non-motorized transportation that phases improvements on a prioritized basis between the three roads; U.S. Highway 101, State Route 255, and Old Arcata Road/Myrtle Avenue.

- C-P18. Coordination with School Districts.** The County shall coordinate with school districts on new school site locations, opening or re-using closed school sites, and significant changes in attendance levels or hours of operation to minimize traffic impacts and promote multimodal school site access.
- C-P19. Best Management Practices for Road Grading.** New development subject to the grading ordinance shall use best management practices as described in the Grading Ordinance to prevent soil erosion and minimize impacts to watersheds from grading activities.
- C-P20. Best Practices for County Road Maintenance.** Continue use of the Five County Water Quality and Stream Habitat Protection Manual for County Road Maintenance or a functional equivalent, as amended and approved by state and federal resource agencies, for County road maintenance and maintenance yards to minimize impacts to watersheds from roads and maintenance yard facilities.
- C-P21. State and Federal Consistency.** Road construction and maintenance activities performed by the County or under the County's land use jurisdiction shall be consistent with and support approved state and federal salmon or steelhead recovery plans, Clean Water Act Total Maximum Daily Loads (TMDLs) and the National Pollution Discharge Elimination System Stormwater Program.

### Public Transportation

- C-P22. Public Transit.** The County shall support the guiding goals, policies, and objectives of the Public Transit and Paratransit Service Element of the Regional Transportation Plan as amended.
- C-P23. Public Transit Service.** Public transportation systems in the County should be coordinated and integrated so that a full range of travel patterns and connectivity with other modes of transportation can be supported.
- A. Existing and future public transit services should be coordinated so that service from rural areas is effectively integrated with urban service. Schedules should be designed for a smooth transfer between rural and urban buses. Fares should be integrated so that a person pays only once for the full trip. Convenience facilities should be made available so that transfer areas are protected from the weather and bus information is provided.
  - B. Automobile and bicycle transport should be integrated with public transit by developing adequate parking facilities at major bus stops and, where feasible, transporting bicycles on the buses along the intercity bus routes.
  - C. Multi-family housing, public uses such as libraries, schools and community centers, and commercial uses should be encouraged in areas serviced by public transit.
  - D. Public transportation should support access to social services and mitigate the impacts of service changes to social service clients.

- E. Public transportation should provide access to recreation areas.

### **Bicycle and Pedestrian Travel**

- C-P24. Investment in Improvements.** The County's Capital Improvement Plan shall include an assessment of the needs of bicycles and pedestrians and allocate funds consistent with the goal of increasing the safety, functional efficiency, and capacity of pedestrian and bike routes. The level of service and quality of service for pedestrians and bicycles shall be increased when expanding roadway capacity for motorized circulation. Road resurfacing projects should provide improved access and safety for bicycles.
- C-P25. Multimodal Level of Service Standards.** Use objective Multimodal Level of Service Standards; for example, the Florida Department of Transportation's "Quality/Level of Service Handbook" (FDOT, 2002) or the Transportation Research Board's "Highway Capacity Manual" (TRB, 2000) to assess and plan the multi-modal capacity of county roads and intersections. Analyze neighborhood level conditions using objective methods and criteria such as "walkability audits."
- C-P26. Bicycles and Pedestrian Facilities in New Subdivisions.** Off-street bike and pedestrian ways or, at a minimum, sidewalks separate from roadways shall be required of new major subdivisions. The County shall provide incentives for design and investments in bicycle and pedestrian access beyond regulatory requirements.
- C-P27. Right-of-Way Design Standards.** Right-of-way design standards should incorporate specifications for bicycles, pedestrians, public transit facilities, and buffers.
- C-P28. Landscape Buffer Strips.** Landscape buffer strips shall be used, where feasible, to segregate pedestrian walkways from arterial and collector roadways.
- C-P29. Removal of Obstacles in Pathways.** New pathways and sidewalks shall be free of obstacles such as utility poles and mailboxes. Where obstacles are unavoidable on existing sidewalks or pathways, they shall be widened or otherwise designed to provide the least amount of obstruction to users.
- C-P30. On-Street Parking.** Design on-street parking in commercial areas to minimize conflicts with planned bicycle routes. Creative on-street parking arrangements such as parking pockets or bays shall be considered to improve design flexibility.
- C-P31. Design Standards for All Pathways.** Published design standards, such as the Caltrans Highway Design Manual or equivalent, shall be used by the County Public Works Department for the design and construction of pedestrian and bicycle paths. All new hard surfaced walkways shall be wheelchair accessible. Existing hard surfaced walkways should be improved to be wheelchair accessible when funding is available or when development projects occur on adjacent parcels.

**C-P32. Traffic Calming.** Use traffic calming measures, where appropriate, as a means of providing safe pedestrian and bicycle access. Traffic calming measures include, but are not limited to, roundabouts, chicanes, curb extensions, and traffic circles.

**C-P33. Protection of Designated Pedestrian and Bicycle Routes.** The County shall review land development along and adjacent to designated pedestrian and bicycle routes to ensure that adjacent new development is consistent with established right-of-ways and compatible with the safety and capacity of the corridor.

**C-P34. Encourage Bicycle Facilities.** Encourage the placement of secure, weather-protected bicycle storage facilities at bus stops, businesses, and public buildings.

Encourage the addition of bicycle transport racks on public buses.

**C-P35. Development of Railroad Right-of-Ways for Bicycles and Pedestrians.** Encourage development of the Northwestern Pacific (NWP) and Annie and Mary Railroad rights-of-way as Class 1 bikeway (bike and pedestrian path) provided those uses do not conflict with regional rail transportation system plans.

**C-P36. Develop a Regional Trails System.** Support efforts to establish and connect a regional trails system extending from Trinidad to Garberville and east to Willow Creek and the Hoopa Valley, with linkages to the California Coastal Trail system.

**C-P37. Encourage Equestrian Horse Trails.** Encourage the development of equestrian recreation trails.

### Marine Transportation

**C-P38. Channel Maintenance.** Support continued maintenance of harbor channels to provide deep water access to existing and planned port facilities.

**C-P39. Commercial Fishing Facilities.** Support the improvement and modernization of facilities that provide support and access to markets for the commercial fishing industry.

**C-P40. Public Infrastructure Supporting Private Investment.** Support investments in public infrastructure that increase readiness and facilitate private initiatives and investment into port enterprises such as marine-dependent industrial use, boat building and repair facilities, fleet service facilities, tourism, recreation, and fish processing facilities.

**C-P41. Movement of Goods.** Encourage marine transport options, such as coastal barge service, to reduce truck transportation on highways 101 and 299.

## Rail Transportation

- C-P42. Re-establishing Regional Rail Service.** Public investment to re-establish regional rail service should be contingent on a private or public demand for sustained rail service and an analysis of net benefits to the County's economy, transportation systems, and environment.
- C-P43. Rail Right-of-Way.** Protect and reserve the rail right-of-way for public and private transportation uses.

## Air Transportation

- C-P44. Expansion of Airline Service.** The County shall work to sustain and expand commercial passenger airline service to and from the County consistent with the Arcata-Eureka Airport Master Plan and the economic development goals of the County.

## 7.5 Standards

- C-S1. Functional Classifications.** Roadway functional classifications and standards are shown below in Table 7-B (pages 7-20 and 7-21), and further specified in Title III—Land Use and Development Division 2 Subdivision Regulations.
- C-S2. Neighborhood Connectivity.** Standards for neighborhood connectivity shall be those specified in Title III—Land Use and Development Division 2 Subdivision Regulations. Connectivity standards shall govern:
- A. Intersection spacing
  - B. Block sizes
  - C. Cul-de-sacs and dead-end roads
  - D. Secondary access requirements
  - E. Gated communities and other restricted access roads
  - F. Access connections between local, connector and arterial roads
  - G. Pedestrian and cycling connections
  - H. Construction and connection of street "stubs," to adjacent parcels
- C-S3. Traffic Thresholds of Significance.** Apply objective measures, such as roadway capacity and level of service from the Transportation Research Board Highway Capacity Manual or its equivalent, to make determinations on the significance of traffic impacts for CEQA purposes.

- C-S4. Pavement Management Criteria.** Strive to maintain the overall condition of County-maintained roadways above the 50<sup>th</sup> percentile of the Overall Condition Index (OCI) and Modified OCI developed in the 2008 Technical Report.
- C-S5. Prioritizing Roadway Capital Expenditures.** Objective criteria shall be used to prioritize roadway capital expenditures. Criteria shall be developed to reflect consideration of:
- A. Accident data and traffic engineering safety analysis for safety projects.
  - B. LOS measures for congestion relief projects.
  - C. Analysis of future development potential based on the Housing Element land inventory for growth accommodating projects.
  - D. Reductions in roadway system maintenance costs.
  - E. Community demand and public interest.
- C-S6. Prioritizing Road Maintenance Projects.** Use and refine the OCI rating system to prioritize road maintenance projects for roads that have been assessed under this system. Maintenance projects on other roads shall use the Modified OCI system.
- C-S7. Transit, Bicycle, and Pedestrian Level of Service Standards.** Bicycle and pedestrian Level of Service Standards shall be specified in Title III—Land Use and Development Division 2 Subdivision Regulations. For land use planning purposes, the County shall reference Transit Level of Service standards specified in the Public Transit Service Element of the Regional Transportation Plan as amended.
- C-S8. Pedestrian and Bicycle System.** A Board adopted Pedestrian and Bicycle System Plan consistent with the Regional Transportation Plan shall identify trails and routes considered a part of County maintained circulation system. Development projects proposed on lands that include a County maintained trail or route may be required to dedicate easements or make improvements if an individualized determination is made that the dedication is related both in nature and extent and is roughly proportional to the impact of the proposed development consistent with standards specified in Title III—Land Use and Development Division 2 Subdivision Regulations.
- C-S9. Prioritization Pedestrian and Bicycle Facilities and Routes.** Objective criteria shall be used to prioritize construction of pedestrian and bicycle facilities and routes. Criteria shall be developed to reflect consideration of:
- A. Providing safe and continuous connections between:
    - 1) Neighborhoods and public schools
    - 2) Residential areas and workplaces
    - 3) Transit stops and public facilities

- 4) Adjacent open spaces or recreation areas
  - B. Reductions in vehicle miles traveled
  - C. Community demand and public interest
- C-S10. Equestrian Horse Trails.** The Federal Highway Administration, "Equestrian Design Guidebook for Trails," or its equivalent, shall be used as a guide for the analysis and design of equestrian trails.

## 7.6 Implementation Measures

- C-IM1. Circulation Standards.** Review and update roadway, pedestrian, and bicycling facility standards in the Humboldt County Roadway Design Standards Manual, Title III—Land Use and Development Division 2 Subdivision Regulations, and other appropriate ordinances.
- C-IM2. Tracking Road Improvement Requirements.** Public Works shall develop, maintain, and publish an inventory of road segments and intersections that do not meet LOS or road classification standards given existing traffic levels or number of currently developed parcels.
- C-IM3. Road Abandonment.** Proposals to vacate or abandon ownership or maintenance of County roads shall include a General Plan consistency review and analysis.
- C-IM4. Regional Coordination.** Support and participate in joint circulation system and land use planning with HCOAG, affected cities, and Caltrans. Maintain, update, and validate the GEATM or its equivalent on a regular basis, and use the model to evaluate development-related traffic impacts on County and city existing and proposed circulation system.
- C-IM5. Roadway System Construction.** Develop funding mechanisms to complete construction of critical segments of the roadway system designated in the Circulation Element and identified in the Capital Improvement Plan.
- C-IM6. Coordination with Public Health.** Refer subdivisions creating more than 30 parcels and discretionary permits for commercial developments in excess of 50,000 square feet to the Environmental Health Division for review and comments on potential public health effects.
- C-IM7. Transit Infrastructure.** Work with regional transit providers (K-T Net, Blue Lake Rancheria Transit, Humboldt Transit Authority, Arcata & Mad River Transit System and Redwood Coast Transit) to situate transit stops and hubs at locations that are convenient for transit users, and promote increased transit usage through the provision of shelters, benches, and other amenities.
- C-IM8. Park and Ride Facilities.** Support Caltrans' efforts to add park-and-ride lots in McKinleyville and Fortuna.

- C-IM9. Adoption of Water Quality and Stream Habitat Protection Measures.** Formally adopt and maintain the Five County, “Water Quality and Stream Habitat Protections Manual for County Road Maintenance” or its equivalent, to guide the following activities:
- A. Routine and emergency road repair
  - B. Maintenance of county roads and related facilities, including actions taken to prevent erosion and/or the deterioration of a roadway, such as activities affecting the cutbank, road surface, fillslope, and all drainage structure
  - C. Maintenance and replacement of bridges and culverts
  - D. Activities on County-owned maintenance yards
  - E. Measures to protect the traveling public, such as snow and ice removal
- C-IM10. U.S. Highway 101 Safety Corridor Improvements.** Issuance of Coastal Development Permits and other discretionary permits by the County for the U.S. Highway 101 Safety Corridor Improvement Project should support a strategy that treats all three main roads between Arcata and Eureka (U.S. Highway 101, State Route 255, and Old Arcata Road/Myrtle Avenue) as one system. The strategy would develop an overall improvement plan that phases improvements on a prioritized basis between the three roads.
- C- IM11. Transit Service to East, South and North County.** Pursue funding and partnerships with the Humboldt Transit Authority, Native American tribes, and non-profit transportation organizations to establish and sustain transit services to rural communities in the eastern, southern, and northern portions of the county.
- C-IM12. Pedestrian and Bicycle System Plan.** Public Works shall prepare a Pedestrian and Bicycle System Plan consistent with the Regional Transportation Plan and incorporate appropriate implementation standards in Title III—Land Use and Development Division 2 Subdivision Regulations.

Functional Classification		Recmnd. ROW	Min. ROW	Sum =>	Sidewalk	Landscape Strip	Parking Lane	Travel Lanes				Median / CLT	Travel Lanes				Parking Lane	Landscape Strip	Sidewalk
								Bike	No. 3	No. 2	No. 1		No. 1	No. 2	No. 3	Bike			
Urban <sup>(3)</sup>	Arterial - Other Principal (6 lane + Median/CLT)	129 <sup>(1)</sup>	129	129	6	10		5	12	12	12	15	12	12	12	5		10	6
Urban <sup>(3)</sup>	Arterial - Minor (4 lane + Median/CLT)	105 <sup>(1)</sup>	105	105	6	10		5		12	12	15	12	12		5		10	6
Urban <sup>(3)</sup>	Arterial - Minor (2 lane + Median/CLT)	81 <sup>(1)</sup>	81	81	6	10		5			12	15	12			5		10	6
Urban <sup>(3)</sup>	Collector (4 lane + Median/CLT)	97 <sup>(1)</sup>	97	97	6	6		5		12	12	15	12	12		5		6	6
Urban <sup>(3)</sup>	Collector (2 lane + Median/CLT)	86 <sup>(1)</sup>	86	86	6	6	8	5			12	12	12			5	8	6	6
Urban <sup>(3)</sup>	Local	62 <sup>(2)</sup>	62	62	5	6	8				12		12				8	6	5
Urban <sup>(3)</sup>	Local up to 400 parcels	62 <sup>(2)</sup>	60	60	5	6	8				11		11				8	6	5
Urban <sup>(3)</sup>	Local up to 300 parcels	62 <sup>(2)</sup>	58	58	5	6	8				10		10				8	6	5
Urban <sup>(3)</sup>	Local up to 80 parcels	62 <sup>(2)</sup>	56	56	5	6	8				9		9				8	6	5
Urban	Local (non-SRA) up to 12 parcels	62 <sup>(2)</sup>	54	54	5	6	8				8		8				8	6	5
Urban	Local (non-SRA) up to 6 parcels	62 <sup>(2)</sup>	50	50	5	6	8				6		6				8	6	5
Urban <sup>(3)</sup>	Alley	20	20	20							10		10						

footnotes: (1) Additional right of way for Arterial Roads and Collector Roads will be needed at intersections for dedicated right turn lanes and bus stops.  
 (2) Recommended Right of Way should always be used. Minimum Right of Way may be used when it is demonstrated that a road will never be able to serve more than the parcels shown.  
 (3) Meets County Fire Safe Regulation Ordinance regarding minimum roadway width.  
 (4) Rural roads assume that all parking will be provided on-site (no on street parking is permitted). If on street parking is expected, then an urban road should be built.

Table 7-B. Right of Way Requirements for Roads - Rural																	
Functional Classification		Recmnd. ROW*	Min. ROW	Sum =>			Shoulder	Travel Lanes				Median / CLT	Travel Lanes				Shoulder
								Bike	No. 3	No. 2	No. 1		No. 1	No. 2	No. 3	Bike	
Rural <sup>(3)(4)</sup>	Arterial - Other Principal (6 lane + Median/CLT)	129 <sup>(1)</sup>	129	113			8	5	12	12	12	15	12	12	12	5	8
Rural <sup>(3)(4)</sup>	Arterial - Minor (4 lane + Median/CLT)	105 <sup>(1)</sup>	105	89			8	5		12	12	15	12	12		5	8
Rural <sup>(3)(4)</sup>	Arterial - Minor (2 lane + Median/CLT)	81 <sup>(1)</sup>	81	65			8	5			12	15	12			5	8
Rural <sup>(3)(4)</sup>	Collector - Major (4 lane + Median/CLT)	97 <sup>(1)</sup>	97	81			4	5		12	12	15	12	12		5	4
Rural <sup>(3)(4)</sup>	Collector - Minor (2 lane + Median/CLT)	86 <sup>(1)</sup>	86	54			4	5			12	12	12			5	4
Rural <sup>(3)(4)</sup>	Local	62 <sup>(2)</sup>	62	40			8				12		12				8
Rural <sup>(3)(4)</sup>	Local up to 400 parcels	62 <sup>(2)</sup>	60	34			6				11		11				6
Rural <sup>(3)(4)</sup>	Local up to 300 parcels	62 <sup>(2)</sup>	58	30			5				10		10				5
Rural <sup>(3)(4)</sup>	Local up to 80 parcels	62 <sup>(2)</sup>	56	26			4				9		9				4

footnotes:  
 (1) Additional right of way for Arterial Roads and Collector Roads will be needed at intersections for dedicated right turn lanes and bus stops.  
 (2) Recommended Right of Way should always be used. Minimum Right of Way may be used when it is demonstrated that a road will never be able to serve more than the parcels shown.  
 (3) Meets County Fire Safe Regulation Ordinance regarding minimum roadway width.  
 (4) Rural roads assume that all parking will be provided on-site (no on street parking is permitted). If on street parking is expected, then an urban road should be built.