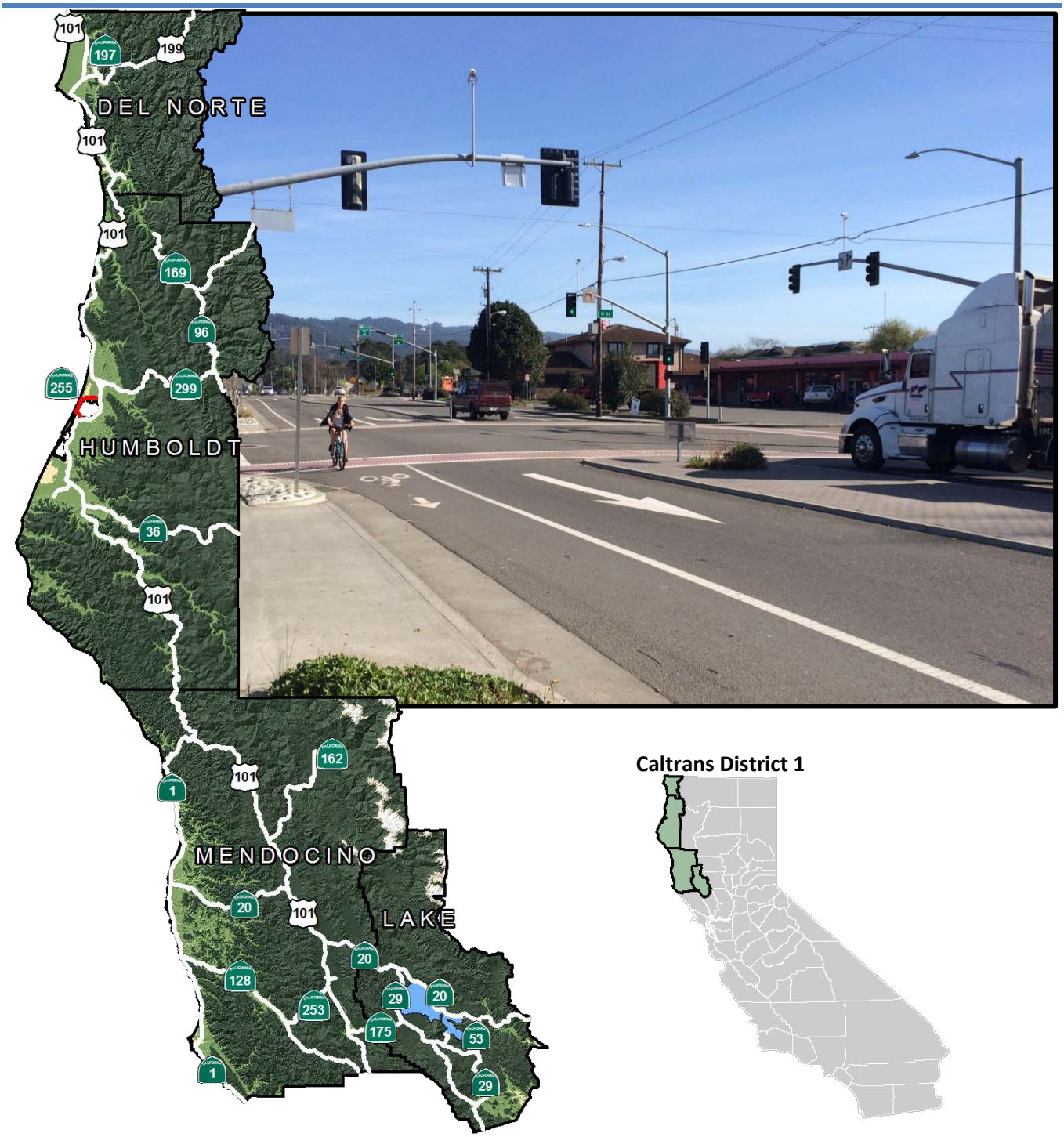
# Transportation Concept Report

## State Route 255

## District 1

## June 2017




Caltrans District 1



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**California Department of Transportation**

Providing a Safe, Sustainable, Integrated and Efficient Transportation System to Enhance California's Economy and Livability

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# ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by evaluating conditions and proposing enhancements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety, mobility, delivery, stewardship, and service.

The System Planning process for District 1 is primarily composed of three parts: the District System Management Plan (**DSMP**), the DSMP Project List, and the Transportation Concept Report (**TCR**). The District-wide DSMP is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The DSMP Project List is a list of planned and partially programmed transportation projects used to recommend projects for funding. The TCR is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. These System Planning products are also intended as resources for stakeholders, the public, regional agencies, and local agencies.

## TCR Purpose

California's State Highway System needs long range planning documents to guide the logical development of transportation systems as required by CA Gov. Code §65086 and as necessitated by the public, stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 20-25 year planning horizon. The TCR is developed with the goals of increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational improvements and travel demand management components of the corridor.

# STAKEHOLDER PARTICIPATION

A draft copy of this TCR has been circulated to our transportation partners in Humboldt County including the Humboldt County Association of Governments, Manila Community Services District, Cities of Eureka and Arcata, Humboldt Bay Harbor Recreation and Conservation District, and several Native American Tribes with interest along the route. The draft TCR was circulated to other functional units within the District Headquarters System Planning for compliance and compatibility with District and Statewide directives and policies. Input was received and revisions made as appropriate.

# EXECUTIVE SUMMARY

State Route (SR) 255 is a south-north route located entirely within District 1 in Humboldt County. The Route begins at the junction of US 101 and SR 255 in the City of Eureka, and continues northwest over Humboldt Bay to the Samoa Peninsula. SR 255 then proceeds in a northeasterly direction through the community of Manila and into the City of Arcata, where it ends at its junction with US 101. SR 255 is approximately 8.8 miles in length (HUM-255-PM 0.000/8.80).

The majority of the route, from post mile 0.00 through post mile 8.34, is functionally classified as a Minor Arterial. The remainder of the route, from post mile 8.34 (K Street) to post mile 8.80, is functionally classified as a Principal Arterial.

## CONCEPT SUMMARY

SR 255 is divided into three segments for system planning purposes. Segment 1 has an existing, 20-year, and post 20-year concept facility of a two-lane expressway. Segment 2 has an existing, 20 year, and post 20-year concept facility of a two-to-four lane conventional highway and expressway. Segment 3 has an existing, 20-year, and post 20-year concept facility of a two-lane conventional highway.

| Segment (1-HUM-255) | Segment Description | Existing Facility | 20-25 Year Facility Concept | 20 Year Operations and Management Concept | Post-25 Year Concept |
|---|---|---|---|---|---|
| 1 (PM 0.0/2.02) | Route 101 in Eureka to New Navy Base Road | 2 lane E | 2 lane E | Safety Improvements as Identified, Maintenance and Rehabilitation | 2 lane E |
| 2 (PM 2.02/7.95) | New Navy Base Road to Arcata City limits | 2-4 lane C/E | 2-4 lane C/E | Safety Improvements as Identified, Maintenance and Rehabilitation | 2-4 lane C/E |
| 3 (PM 7.95/8.80) | Arcata City limits to Route 101 in Arcata | 2-4 lane C | 2 lane C | Safety Improvements as Identified, Maintenance and Rehabilitation | 2 lane C |

*C – Conventional*
*E – Expressway*
*PM - Post Mile*

## CONCEPT RATIONALE

The corridor concept guides long-range planning of route improvements. It protects the State's investment in SR 255, while recognizing financial and environmental constraints, which will not allow the programming of extensive improvements for all state highways.

## PROPOSED PROJECTS AND STRATEGIES

There are no planned capacity increasing projects for SR 255, but projects may be necessary to increase community connectivity and non-motorized traffic access. These possible projects include a 101/255 interchange improvement in Arcata, various intersection improvements in Manila, traffic calming projects, non-motorized paths, and landscaping as discussed in the *SR 255 Engineered Feasibility Study for Non-motorized Traffic Improvements and Manila Transportation Enhancements* dated February 15th, 2013.

## STRATEGIES DEVELOPED TO ACHIEVE AND MAINTAIN THE CORRIDOR CONCEPT

- Safety: Safety is the highest priority of Caltrans and our regional partners. Necessary safety improvements will be made as needs are identified.

- Maintenance and Rehabilitation: Maintain and rehabilitate as necessary. Consideration should be given to shoulder widening in conjunction with pavement rehabilitation projects when necessary to provide adequate paved shoulder width for both motorized and non-motorized traffic. Bridge replacement or rehabilitation, storm damage and operational improvement projects will also be considered when necessary.

- Community Planning Strategy: District 1 will cooperate with local transportation and land use planning agencies on SR 255 to assure that the highway will be a community asset as well as provide for the safe movement of motorized and non-motorized traffic.

- Cooperation with Transportation Partners: District 1 appreciates the cooperation of its transportation partners in the development of this Transportation Concept Report, and looks forward to continuing cooperation to achieve the selected concept.

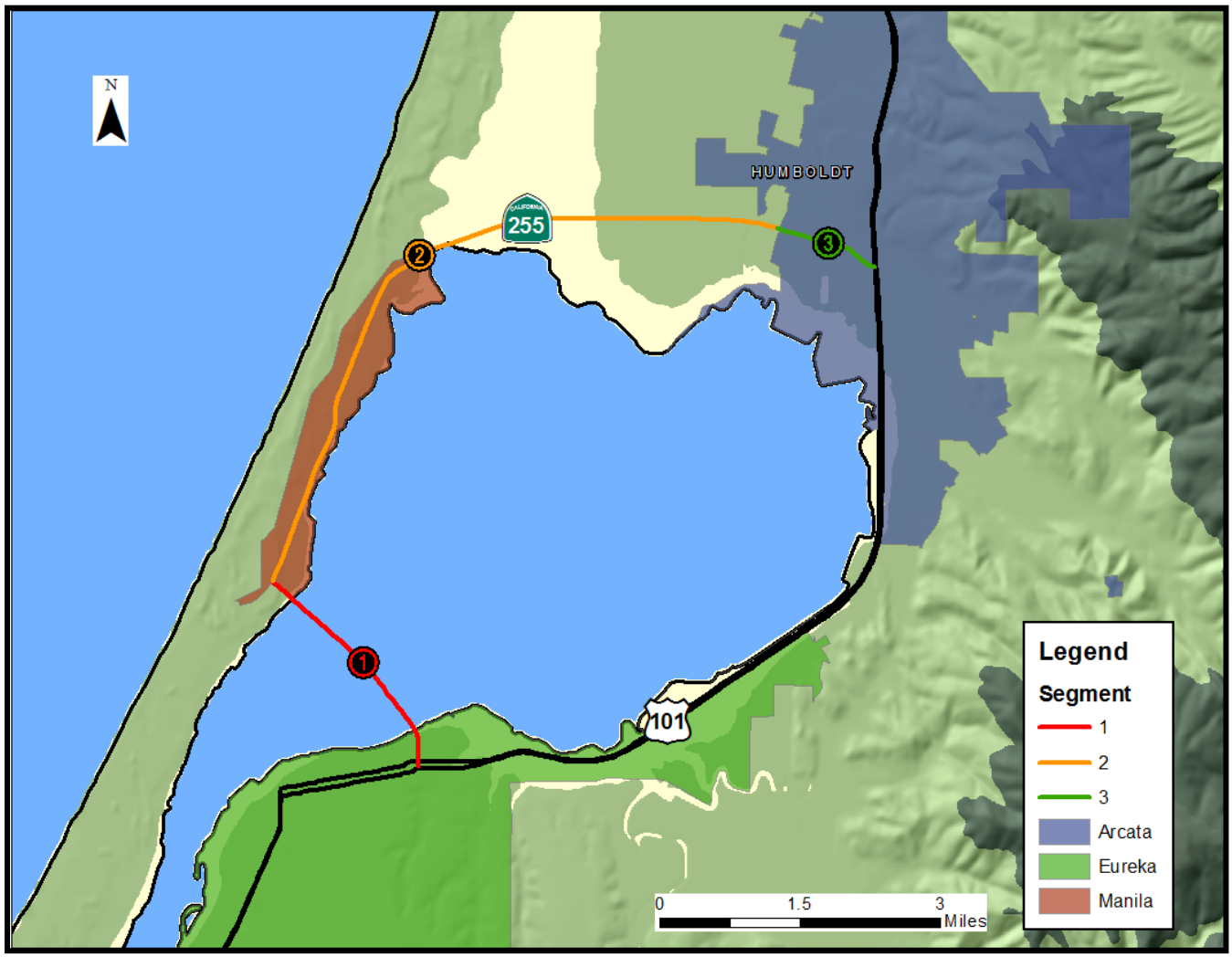
# CORRIDOR OVERVIEW

## ROUTE SEGMENTATION

SR 255 is divided into three segments for system planning purposes. The first segment is approximately 1.7 miles in length, beginning at the US 101/SR 255 junction in Eureka to the Eureka City Limits. Segment 2 is approximately 6.2 miles in length, beginning at the Eureka City Limits and extending to the Arcata city limits. The final segment is approximately 0.85 miles long, beginning at the Arcata City limits and ending at the US101/SR 255 junction.

| Segment | Location Description | County_Route_Begin PM | County_Route_End PM |
|---|---|---|---|
| 1 | Route 101 in Eureka to New Navy Base Road | HUM-255-0.00 | HUM-25-2.02 |
| 2 | New Navy Base Road to Arcata City limits | HUM-255-2.02 | HUM-255-7.95 |
| 3 | Arcata City limits to Route 101 in Arcata | HUM-255-7.95 | HUM-255-8.80 |

**SR 255 Segment Map**



## ROUTE DESCRIPTION

### Route Location:

SR 255 connects the Cities of Eureka and Arcata via Humboldt Bay and the Samoa Peninsula. SR 255 begins at US 101 in Eureka, and proceeds across Humboldt Bay via the three Samoa Bridges and Woodley and Indian Islands, where it turns northeast and follows the Samoa Peninsula before continuing east, back to Route 101 in the City of Arcata. The entire route is within Humboldt County. SR 255 is approximately 8.8 miles in length (HUM-255-0.00/8.80).

SR 255 terminates at each end with Route 101, a principal arterial. The southernmost intersection is within the City of Eureka and the northernmost intersection is within the City of Arcata. Route 101 is the primary highway access route to the California North Coast.

### Route Purpose:

Segment 1, from US 101 in Eureka to New Navy Base Road, is 2.02 miles in length and is functionally classified as an Urban Minor Arterial. Segment 3, 0.85 miles in length, is within the Arcata city limits. Part of the segment, from the Arcata City limits to K Street (PM 7.95-8.34) is functionally classified as an Urban Minor Arterial. The remaining portion of Segment 3, from K Street to US 101 in Arcata (PM 8.34-8.80) is functionally classified as an Urban Principal Arterial. The intermediate portion, Segment 2, is 5.93 miles, traverses rural areas, and is functionally classified as a Rural Minor Arterial.

SR 255 provides the cities of Eureka and Arcata with direct access to industrial locations on the Samoa Peninsula and is the only road connecting the Woodley Island Marina with the mainland and peninsula. It also serves local traffic for the community of Manila, located adjacent to SR 255, and recreational traffic for access to peninsula beaches. Residents of the communities of Samoa, Fairhaven, and Manila (all with populations of less than 1,000) also use SR 255 for local traffic, and for access to Eureka, Arcata, and US 101.

### Major Route Features:

SR 255 is the only road to the industrial and recreational uses and the communities on the Samoa Peninsula and Woodley Island. The route also serves as a major Goods Movement facility for the Humboldt Bay Port. Historically, many industries related to lumber, logging, and timber processing were located on, or to the south of, SR 255. Currently, the Fairhaven Business Park and Redwood Marine Terminals, located on the Peninsula are heavily used facilities for transferring goods between the shipping channel on Humboldt Bay and much of the north coast. Woodley Island is home to the Humboldt Bay Harbor, Recreation & Conservation District as well as the National Oceanic and Atmospheric Administration. A large portion of the Samoa Peninsula has transitioned to recreational uses and offers access to open space, beaches, and off-road recreation areas.

**Route Designations and Characteristics:**

| | | | |
|---|---|---|---|
| **Segment #** | 1 (PM 0.00/2.02) | 2 (PM 2.02/7.95) | 3 (PM 7.95/8.80) |
| **Freeway & Expressway System** | Yes | Yes (2.02-4.75) | No |
| **National Highway System** | No | No | Yes (PM 8.34-8.80) |
| **Strategic Highway Network** | No | No | No |
| **Scenic Highway** | No | No | No |
| **Interregional Road System** | No | No | No |
| **Priority Interregional Route** | No | No | No |
| **Federal Functional Classification** | Minor Arterial | Minor Arterial | Minor Arterial (PM 7.95-8.34)/ Principal Arterial (PM 8.34-8.80) |
| **Goods Movement Route** | Yes | Yes | Yes |
| **Truck Designation** | California Legal | California Legal | California Legal |
| **Rural/Urban/Urbanized** | Small Urban | Rural | Small Urban |
| **Regional Transportation Planning Agency** | HCAOG | HCAOG | HCAOG |
| **Local Agency** | City of Eureka | Humboldt County | City of Arcata |
| **Tribes** | Wiyot, Blue Lake Rancheria, Bear River Rancheria | Wiyot, Blue Lake Rancheria, Bear River Rancheria | Wiyot, Blue Lake Rancheria, Bear River Rancheria |
| **Air District** | NCUAQMD | NCUAQMD | NCUAQMD |
| **Terrain** | Rolling Bridges | Flat | Flat |

HCAOG – Humboldt County Association of Governments

NCUAQMD – North Coast Unified Air Quality Management District

## COMMUNITY CHARACTERISTICS

SR 255 traverses the community of Manila, and portions of the cities of Eureka and Arcata within Humboldt County.

According to the 2014 American Community Survey, Humboldt County has a population of 134,809, with approximately 75.2% white, 10.8% Hispanic or Latino, 4.2% Native American, 2.5% Asian, and 1.2% African American and 5.7% two or more races. Of those residents, 15.1% are over the age of 65, 65.5% are between the ages of 18 and 65, and 19.4% are under the age of 18. According to the 2015 *California County-Level Economic Forecast*, both per capita and median household income average is approximately 75% of the state average. Additionally, the unemployment rate in Humboldt County is 5.9%.

Government and health care account for about 45% of Humboldt County's employment, with trade/transportation/utilities making up another 29%. Furthermore, about 11% of Humboldt County's jobs come from leisure related sources. The community of Manila and the cities of Eureka and Arcata all have a similar breakdown of age, race, income, and employment as the county.

### Land Use

Both ends of SR 255 terminate in small urban areas made up of mixed residential and commercial land uses. A majority of Segment 1 consists of structures spanning the Humboldt Bay with access to the Woodley Island

Marina. Land use along the remainder of the SR 255 consists primarily of open space/recreational area, agricultural (dairy land) and rural residential development within the community of Manila.

**Land Use Table**

| Segment | Land Use |
|---|---|
| *1 (PM 0.0/2.02)* | Mixed Use, Natural Resources |
| *2 (PM 2.02/7.95)* | Rural Residential, Open Space, Agricultural Grazing (dairy land) |
| *3 (PM 7.95/8.80* | Mixed Use, Agricultural Grazing (dairy land) |

## SYSTEM CHARACTERISTICS

SR 255 is a two-to-four-lane expressway and highway with a length of approximately 8.8 miles. The median and shoulder widths vary along the route. Segments 1 and 2 both have Vehicle Speed Feedback Signs and Segment 3 has traffic signals. The 20-year and post 20-year concept facility does not have any capacity improvements planned and has the same characteristics as the base year facility.

| Segment # | 1 (PM 0.0/2.02) | 2 (PM 2.02/7.95) | 3 (PM 7.95/8.80) |
|---|---|---|---|
| **Existing Facility** | | | |
| **Facility Type** | E | C/E | C |
| **General Purpose Lanes** | 2/4 | 2/4 | 2/4 |
| **Lane Miles** | 3.76 | 5.62 | 1.02 |
| **Centerline Miles** | 2.02 | 5.93 | 0.85 |
| **Median Width** | 0 | 0-22 | 10 |
| **Median Characteristics** | Undivided | Undivided/Divided, unpaved | Divided, undivided, unpaved and landscaped. |
| **20 Year Concept Facility** | | | |
| **Facility Type** | E | C/E | C |
| **General Purpose Lanes** | 2 | 2/4 | 2/4 |
| **Lane Miles** | 3.76 | 5.62 | 1.02 |
| **Centerline Miles** | 2.02 | 5.93 | 0.85 |
| **Post 20 Year facility** | | | |
| **Facility Type** | E | C/E | C |
| **General Purpose Lanes** | 2 | 2/4 | 2/4 |
| **Lane Miles** | 3.76 | 5.62 | 1.02 |
| **Centerline Miles** | 2.02 | 5.93 | 0.85 |
| **TMS Elements** | | | |
| **TMS Elements (BY)** | Vehicle Speed Feedback Sign | Vehicle Speed Feedback Signs | Traffic Signals |
| **TMS Elements (HY)** | | | |

*(C) Conventional, (E) Expressway*
*TMS – Traffic Management System*

## BICYCLE FACILITY

In the community of Manila, Peninsula Drive and Young Lane can be used as an alternative to SR 255 for cyclists. K Street and 5th Street or 7th Street in the City of Arcata can be used as an alternative to SR 255. However, these require out of direction travel to get to the east side of US 101.

Bicycles are allowed on all state highways within District 1, including SR 255. SR 255 in the City of Eureka has a shoulder width between 0 and 8 ft. The majority of the shoulder width in Segment 1 is 4 ft. The beginning of the segment (PM 0.00 to PM 0.11) has a portion with no shoulder and a portion with 8 ft. shoulder.

Bicycle facility enhancements along SR 255 were discussed in the *Manila Community Transportation Plan* and the Humboldt County Association of Governments' *Regional Transportation Plan*. These enhancements include placing "Share the Road" signs along the highway and creation of a "rail-trail" between Pacific Avenue and the Dean Street-Peninsula Drive intersection. In 2015, Humboldt County was awarded an Active Transportation Grant to construct a Class 1 non-motorized path through Manila, along SR 255 within state right-of-way between Pacific Avenue and Carlson Drive (PM 3.65-4.19).

| Segment | Post Mile | Location Description | Bicycle Access Prohibited | Facility Type | Outside Paved Shoulder Width | Posted Speed Limit | Alternative Facility |
|---|---|---|---|---|---|---|---|
| *1* | *0.000-2.02* | *Junction of SR 101 to the junction of New Navy Base Road* | *No* | *Shared* | *0-8 ft.* | *30/55* | *None* |
| *2* | *2.02-7.95* | *Junction of New Navy Base Road to Arcata City Limits* | *No* | *Shared* | *4-8 ft.* | *55* | *Peninsula Dr/Young Ln. in manila Multi-use path PM 3.65-4.19 (Future)* |
| *3* | *7.95-8.80* | *Arcata City Limits to SR 101 junction* | *No* | *Class II Bike Lanes* | *2-8 ft.* | *55/35* | *K st./7th St. in Arcata (PM 8.35-8.80)* |

## PEDESTRIAN FACILITY

In the City of Eureka (PM 0.00-1.720), none of the streets would serve as a viable alternative for pedestrian traffic on SR 255. In addition, pedestrians are prohibited from using SR 255 from the Woodley Island interchange (PM 0.58) to the western approach of the Samoa Bridges (PM 1.86). This is due to the highway being signed as expressway with pedestrian prohibited (see Additional Topics), and only allowing pedestrian access to the Woodley Island Marina.

Peninsula Drive and Young Lane can be used as an alternative for pedestrian traffic within the community of Manila. Within the City of Arcata (PM 8.352-8.803) there are numerous city streets that would serve as alternatives to SR 255 for pedestrian traffic, all of which would require substantial out of direction travel.

| Segment | Post mile | Location Description | Pedestrian Access Prohibited | Sidewalk Present | Shoulder Width | Facility Description | Alt. Facility |
|---|---|---|---|---|---|---|---|
| *1* | *0.000-2.02* | *Junction of SR 101 to the junction of New Navy Base Road* | Yes (PM 0.58-2.02) | Only in Eureka Urban Area | *0-8 ft.* | No obstructions, Paved Shoulder, sidewalk limited to PM 0.00-0.144 | None |
| *2* | *2.02-7.95* | *Junction of New Navy Base Road to Arcata City Limits* | Yes (PM 2.02-7.95) | No | *4-8 ft.* | No obstruction, paved shoulder | *Peninsula Dr/Young Ln. in manila Multi-use path PM 3.65-4.19 (Future)* |
| *3* | *7.95-8.80* | *Arcata City Limits to SR 101 junction* | No | Only in Arcata Urban Area (PM 8.26-8.6) | *2-8 ft.* | No Obstruction, Paved Shoulder, Limited Sidewalk | 5th or 7th streets between K street and F street |

Caltrans is committed to complying with the Americans with Disabilities Act (ADA) standards in conjunction with highway resurfacing, restoration, rehabilitation, or reconstruction.

## TRANSIT FACILITY

The Redwood Transit System (RTS) serves all of SR 255, with five trips in each direction on weekdays, and two trips in each direction on Saturdays. There are two bus stops on SR 255, one at the Manila Community Center and one at the intersection of Lupin Drive and Peninsula Drive.

Both Eureka Transit Service and the Arcata and Mad River Transit Service have loop routes with bus stops within a few blocks of SR 255. Headways for all Eureka Transit Service and Arcata and Mad River Transit Service routes are one-hour. However, there is no service for either system on Sundays .

| Segment | Route | Mode & Collateral Facility | Service Provider | Route End Points | Stations | |
|---|---|---|---|---|---|---|
| | | | | | Cities | Postmiles |
| 1-3 | RTS Manila | Traditional Bus | Redwood Transit System | Scotia to Trinidad | Eureka, Manila, and Arcata | 0.000-8.803 |
| 1 | Purple | Traditional Bus | Eureka Transit Service | Eureka Loop | Eureka | 0.112 |
| 3 | Red and Gold | Traditional Bus | Arcata and Mad River Transit Service | Arcata Loop | Arcata | 8.525 |

## FREIGHT

SR 255 is designated as a "California Legal" truck route. Long-term sustainable community improvements identified in the *SR 255 Engineered Feasibility Study for Non-motorized Traffic Improvements and Manila Transportation Enhancements* dated February 15, 2013, are likely to increase truck travel times on SR 255 north of the SR 255 New Navy Base Road intersection.

| Facility Type/Freight Generator | Location | Mode | Major Commodity/Industry | Comments/Issues |
|---|---|---|---|---|
| Highway/US 101 | Segments 1-3 (PM 0.00/8.803) | Truck | Forest Products | Primary Freight Generator |
| Highway | New Navy Base Road | Truck | Wood Waste/Energy | Soil/Mulch Biomass Fuel |

Freight generators located on New Navy Base Road must use SR 255 to access major north-south State Highway routes, including US 101.

## ENVIRONMENTAL CONSIDERATIONS

All of SR 255 is within the California Coastal zone, and three large bridges in Segment 1 of the route span Humboldt Bay. As SR 255 is within the coastal zone, a coastal development permit will be required for projects. Primary environmental considerations for SR 255 include:

- Seas level rise resulting from climate change
- Areas of archaeological sensitivity

No Naturally Occurring Asbestos (NOA) sites are shown on the US Geological Survey document "Reported Historical Asbestos Mines, Historical Asbestos Prospects, and Other Naturally Occurring Asbestos in California." Aerially deposited lead is a potential concern, with the exception of Segment 1, which was not constructed until 1971.

Endangered, Threatened and Rare Species: The California Natural Diversity Database lists several species in the vicinity of SR 255 that have various endangered, threatened, or rare status. Additionally the Database lists species that are of special interest to Department of Fish and Wildlife. These are included in the table below.

| Species | Federal Status | California Status | Department of Fish and Wildlife Status |
|---|---|---|---|
| Northern Red Legged Frog | None | None | Species of Special Concern |
| Cooper's hawk | None | None | Watch List |
| Northern Harrier | None | None | Species of Special Concern |
| Osprey | None | None | Watch List |
| Western Snowy Plover | Threatened | None | Species of Special Concern |
| American Peregrine Falcon | Delisted | Delisted | Fully Protected |
| Bank Swallow | None | Threatened | None |
| Black Capped Chickadee | None | None | Watch List |
| Yellow Warbler | None | None | Species of Special Concern |
| California Brown Pelican | Delisted | Delisted | Fully Protected |
| California Clapper Rail | Endangered | Endangered | Fully Protected |
| Green Sturgeon | Threatened | None | Species of Special Concern |
| Tidewater Goby | Endangered | None | Species of Special Concern |
| Longfin Smelt | Candidate | Threatened | Species of Special Concern |
| Eulachon | Threatened | None | Species of Special Concern |
| Coast Cutthroat Trout | None | None | Species of Special Concern |
| Coho Salmon | Threatened | Threatened | Species of Special Concern |
| Steelhead | Threatened | None | Species of Special Concern |
| Chinook Salmon | Threatened | None | None |
| Western Pond Turtle | None | None | Species of Special Concern |
| Beach Layia | Endangered | Endangered | None |
| Menzie's Wallflower | Endangered | Endangered | None |

The area that SR 255 travels through contains the traditional homeland of the Wiyot Tribe, the Blue Lake Rancheria, and the Bear River Rancheria. Due to the possibility of archeologically sensitive areas existing at locations along SR 255, the Wiyot Tribe, Blue Lake Rancheria, and the Bear River Rancheria should be coordinated with and consulted early in the planning process, programming phases, and especially pre-construction.

# CORRIDOR PERFORMANCE

Traffic volumes for SR 255 are generally moderate, with higher volumes within the City of Arcata. According to *the SR 255 Engineered Feasibility Study for Non-motorized Traffic Improvements and Manila Transportation Enhancements,* there was a measurable shift of traffic volumes from the principal arterial (US 101) to the parallel route (SR 255) as local drivers opted to bypass the Safety Corridor established on US 101 between Eureka and Arcata. This initially resulted in 29% increase in traffic volumes. Currently, traffic volumes are about 15% above those prior to implementation of the Safety Corridor.

Level of Service (LOS) has not been calculated for SR 255 within the City of Arcata. However, signalized intersections within that segment may operate at capacity during peak hours.

| Segment # | 1 (PM 0.0/2.02) | 2 (PM 2.02/7.95) | 3 (PM 7.95/8.80) |
|---|---|---|---|
| **Basic System Operations** | | | |
| **AADT (Base Year)** | 8,800 | 7,300 | 10,000 |
| **AADT (Horizon Year)[1]** | 10,600 | 9,300 | 12,000 |
| **LOS Method[2]** | HCM | HCM | HCM |
| **LOS (BY)** | D | D | † |
| **LOS (HY)** | E | D | † |
| **DVMT (BY)** | 15,100 | 45,500 | 8,500 |
| **DVMT (HY)** | 18,200 | 58,000 | 10,200 |
| **Truck Traffic[4]** | | | |
| **Total Truck Average Annual Daily Traffic (TAADT) (BY)** | 840 | 895 | 945 |
| **Total Trucks (% of AADT) (BY)** | 9.5% | 11% | 8% |
| **5+ Axle Average Annual Daily Truck Traffic (TAADT)(BY)** | 315 | 355 | 390 |
| **5+ Axle Trucks (as % of AADT)(BY)** | 4% | 5% | 3% |
| **Peak Hour Traffic Data** | | | |
| **Peak Hour Direction** | N | N | N |
| **Peak Hour Directional Split (BY)** | 60% | 60% | 60% |
| **Peak Hour Volume (BY)** | 920 | 810 | 1070 |
| **Peak Hour Volume (HY)** | 1100 | 970 | 1280 |
| **Peak Hour VMT (BY)** | 1890 | 5050 | 910 |
| **Peak Hour VMT (HY)** | 4450 | 6050 | 1090 |

*1. Caltrans District 1 2013 growth factors were used for traffic volume projections*
*2. LOS analysis obtained using HCS 2010 software*
*3. Truck traffic taken from last reported volumes in 2013. In addition, Horizon year projections are not given due to the unreliability of current volumes, and unknown future land uses on the Samoa Peninsula.*
*† Segment 3 is considered an urban street for highway capacity calculation (signalized intersections control); no level of service has been calculated.*
*AADT – Annual Average Daily Traffic*
*DVMT – Daily Vehicle Miles Traveled*
*TAADT – Truck Annual Average Daily Traffic*
*BY – Base Year*
*HY – Horizon Year*

## ADDITIONAL TOPICS

The Humboldt Bay Harbor Conservation and Recreation District (Harbor District) has plans to improve port facilities and transportation facilities including New Navy Base Road to the south of SR 255. Recreational improvements are also being considered, including the development of an RV park. With these improvements will come increased demand along SR 255. With the closure of two major pulp mills, and other lumber related industries on the southern Samoa Peninsula, industrial truck traffic has decreased along SR 255 to 5% (TAADT is 514) of total vehicular traffic in 2015 at the intersection with SR 101 in the City of Eureka, down from 20% (TAADT was 710) in 1971.

In the 2002 State Highway Log, and in the Table B – Selective Accident Rate Calculation Rate Group, the Samoa Bridges section of SR 255 is classified as an expressway. However, the Samoa Bridges are signed as a freeway, and pedestrians are prohibited from using the bridges from PM 0.58-1.86, though signage is not present. A freeway agreement between the City of Eureka and Caltrans was signed in 1967 and superseded by an additional agreement in 1983, for PM 0-0.7. A freeway agreement between the County of Humboldt and Caltrans was signed in 1967 for PM 0.7-2.0. Since the 1967 and 1983 agreements, the City Limits of Eureka have expanded beyond the agreements, from PM 0.7 to PM 1.38. Clarification of the classification of the highway, freeway signage, and the limits of the freeway agreements should be pursued.

# KEY CORRIDOR ISSUES

## INCREASING COMMUNITY CONNECTIVITY IN MANILA

**Figure 1: Intersection in Manila**

SR 255 divides the community of Manila. The portion of SR 255 that bisects the community of Manila is a two-lane expressway with a 55-mile-per-hour speed limit. In 2002, the residents of Manila and the Manila Community Services District worked together to create the *Manila Community Transportation Plan* (MCTP). This was created out of residents' concerns over connectivity in the community, speed of traffic along SR 255, and safety for motorized and non-motorized traffic crossing SR 255. The MCTP was split into two phases. The purpose of the first phase was to define and document the community's transportation problems through field review conditions and public outreach efforts. This phase identified the following goals for Manila:

- Reduce the speed of traffic on State Route 255 through Manila
- Provide enhanced pedestrian crossing facilities across State Route 255
- Increase accessibility from SR 255 to local streets

Following the goals identified in phase one, phase two was conducted to present alternatives and make recommendations to resolve issues identified in phase one. These recommendations are:

- Install medians
- Install "Share the Road" and "Pedestrian Crossing" signage
- Install vehicle speed feedback signs
- Provide flashing lights and pedestrian crossings
- Consider roundabouts
- Install pedestrian path between Lupin and Pacific Avenues

These issues were further evaluated in the *SR 255 Engineered Feasibility Study (EFS) for Non-motorized Traffic Improvements and Manila Transportation Enhancements* published in February of 2013 by Caltrans. This EFS focused primarily on non-motorized traffic and enhancements to the route in the community of Manila. Within the community of Manila, enhancements focused on community connectivity and traffic calming. In combination with the posted speed in the area, community residents have voiced concern about the connectivity of their community. The EFS sought to study possible enhancements to address the community's concerns. Possible initial improvements discussed are summarized in the following table:

| Improvement | Location (Post Mile) | Summary of Improvement |
|---|---|---|
| Gateway Monuments | PM 3.6 & 4.1 | Aesthetic signage informing drivers they have entered a community |
| Landscaping | PM 3.6-4.1 | A roadside treatment that can help enhance a driver's sense of arrival by adding elements to the field of vision |
| Painted Medians & Islands | PM 3.6-3.9 | Areas within roadway that can be used by pedestrians for refuge. Are also a feature added to convey a sense of arrival to drivers. |
| Optical Speed Bar | PM 3.55-3.65 & PM 4.16-4.26 | A field of converging, painted bars along a traveled way that affect driver's sense of perception of speed (Partially Implemented) |
| Vehicle Speed (Radar) Feedback Signs | PM 3.35 & PM 4.68 | Electronic signs that measure and then relay speed of oncoming vehicle as a means to alerting drivers of their speed. (Implemented) |
| Colorized Shoulders | PM 3.54-4.16 | An aesthetic treatment to the shoulders that reinforces the separation between the traveled way and the shoulders. Also adds to a driver's sense of arrival. |
| Safety Lighting | PM 3.6-4.1 | A safety enhancement that increases the night-time visibility of intersections and roadside areas. |
| Pavement Marking (Lane Narrowing) | PM 3.6-4.1 | Narrowing the travel-way provides additional shoulder area for bicyclists and pedestrians. |

Longer term enhancements discussed in Manila include the following:

| Improvement | Location (Post Mile) | Summary of Improvement |
|---|---|---|
| Curbed Medians and Islands | PM3.64-3.94 | Raised curbs would replace painted islands after prevailing speeds are reduced. |
| Roundabouts | PM 3.64 and/or PM 3.94 | An intersection treatment with proven track record of decreasing severity and frequency of collisions. |
| Traffic Signals | PM 3.64 and/or PM 3.94 | An intersection treatment that can increase accessibility for pedestrians, bicyclists, and traffic entering highway. |
| All Way Stops | PM 3.64 and/or PM 3.94 | Another form of intersection treatment with the capacity to increase access to the highway. |
| High-Intensity Activated Cross Walk (HAWK) | PM 3.7-3.9 | An on-demand crosswalk signal that improves safety for pedestrians crossing the highway. |
| Standard Crosswalk | PM 3.64 and/or PM 3.94 | An improvement that defines the area and location where pedestrian crossing occurs. |

Humboldt County Public Works Department (PWD), in conjunction with Caltrans, prepared an Active Transportation Program (ATP) grant to fund a Class I multi-use path through Manila (PM 3.65-4.19). In October 2015, the California Transportation Commission approved funding for the project to be constructed in the 2017-2018 fiscal year.

## NATIONAL HIGHWAY SYSTEM

The Harbor District sponsored the *Samoa Industrial Waterfront Preliminary Transportation Access Plan* in 2013 to "identify a Preferred Alternative Route for a roadway to support enhanced commercial and industrial transportation on the Samoa Peninsula." As part of a larger strategy to revitalize the waterfront area and improve goods movement through the Port, the plan identified SR 255 as a vital piece of its transportation network and recognizes the necessity for pursuing its designation as part of the National Highway System. The Department acknowledges the Harbor District's intention and will continue working together with them on this effort.

## TSUNAMI ZONE

All of SR 255 exists in a Tsunami Inundation Zone according to the California Department of Conservation. A tsunami has the potential to inundate, or flood, the entire route. In the case of a tsunami, an alternative route such as US 101 or Old Arcata Road can be used; however, no alternate route to Manila or Samoa exists.

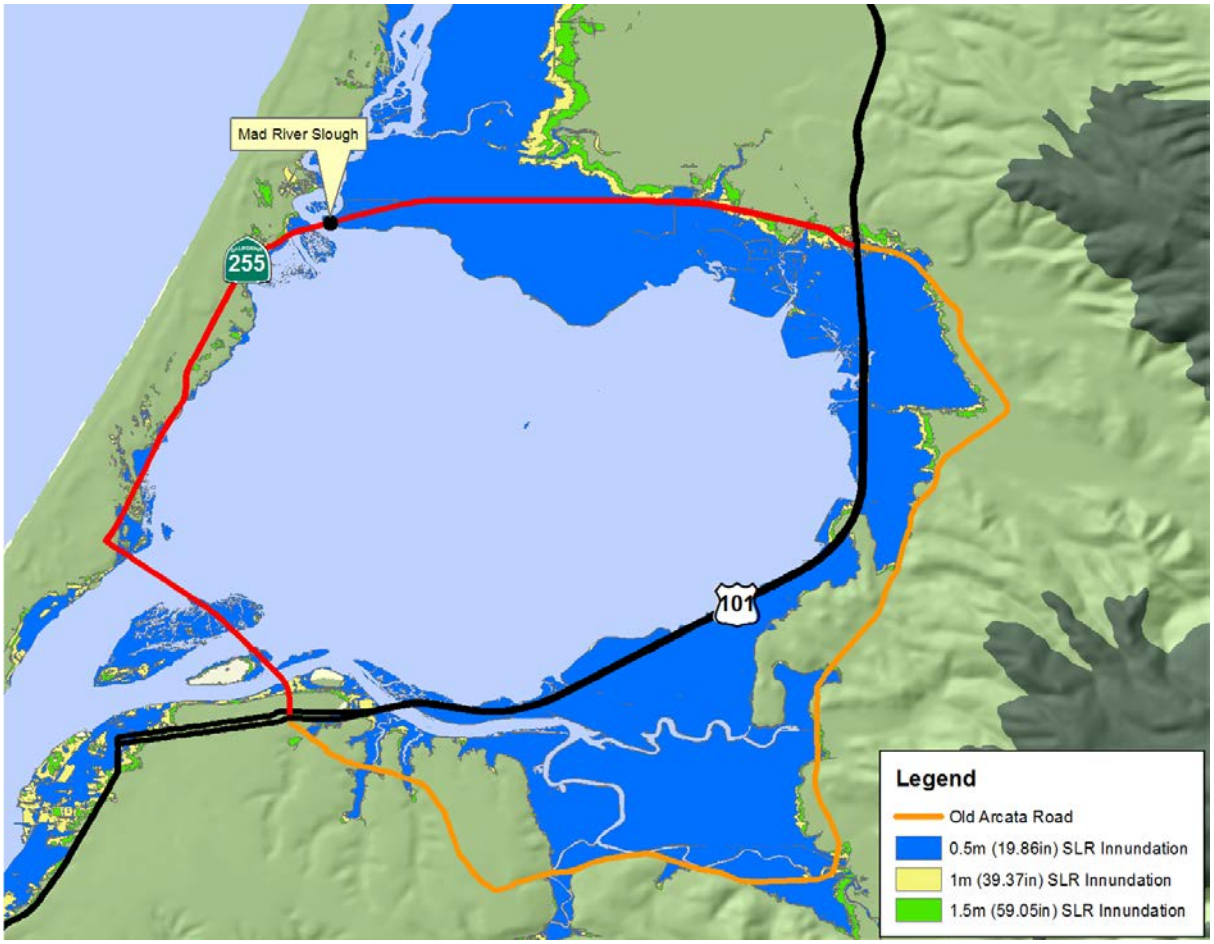
## SEA LEVEL RISE

Nearly all of SR 255 is located on or near the perimeter of Humboldt Bay, and is susceptible to Sea Level Rise (SLR). Current California Coastal Commission guidance on SLR suggests defining an expected life span for projects, and evaluating current science to determine an approximate SLR range in the area. Although this TCR has a horizon year of 2035, it is expected that SR 255 will continue to operate well beyond the 2035 horizon year. As such, the horizon years used for SLR evaluation will be in line with standard practice, using 2030, 2050, and 2100.

A report prepared for the State Coastal Conservancy modeled and mapped SLR in Humboldt Bay based on various SLR estimates. The report also takes into account subsidence of Humboldt Bay, and projects relative SLR. Projections of relative SLR for Mad River Slough (PM 5.15), are provided in the table below.

| Mad River Slough (PM 5.15) | | |
|---|---|---|
| Year | Projection | Range |
| 2030 | 5.23 in. | 3.5-9.37 in. |
| 2050 | 10.59 in. | 6.1-20.55 in. |
| 2100 | 33.93 in. | 19.4 -58.66 in. |

Currently, mapping of SLR in Humboldt Bay is limited to increments of 0.5 meter (19.86 inches). The map below shows inundation of Humboldt Bay at 0.5, 1, and 1.5 meter increments (19.86, 23.37, and 59.05in) of SLR, which is within the range for 2050 and 2100. Included in the map are the three vehicle routes around Humboldt Bay between Eureka and Arcata: SR 255, Old Arcata Road, and US 101. At 19.86 inches of SLR, all routes are at least partially flooded, posing a connectivity issue. Because of the susceptibility of SLR impacts on SR 255, SLR should be addressed during future project development.




# CORRIDOR CONCEPT

The corridor concept for SR 255 consists of a facility concept that identifies the ultimate facility concept for 20-years and beyond.

## CONCEPT RATIONALE

The corridor concept serves as a guide for long-range planning of route improvements. It functions to protect the State's investment in SR 255, while recognizing financial and environmental constraints, which will not allow the programming of extensive improvements for all state highways.

SR 255 provides access to industrial, recreational, and residential locations on the Samoa Peninsula, the Woodley Island Marina, and the community of Manila.

# FACILITY CONCEPT

SR 255 will remain a mix of 2- and 4- lane conventional highway and expressway, maintained and rehabilitated as necessary on its existing alignment during the 20-25 year planning horizon. Safety and operational improvements at spot locations will be considered as necessary. Sustainable community projects on SR 255 within the Community of Manila will also be considered.

## PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

### Planned and Programmed Projects

A Caltrans Active Transportation Planning/Safe Routes to School Grant has been awarded to Humboldt County to construct a separated Class I non-motorized path. The project, titled *"Manila Moves,"* is located on the western side of SR 255, within the State right-of-way, from the Dean Ave/Pacific Ave intersection to Carlson Drive and extends onto county roads. This shared-use path will link two disconnected neighborhoods, improve access to existing and future community assets, and construct new infrastructure for non-motorized crossings. It is scheduled to go to construction in the year 2020.

### Proposed Projects and Strategies

There are no planned capacity-increasing projects for SR 255, but projects may be proposed, to increase community connectivity and non-motorized access, such as the programmed "*Manila Moves"* project. These conceptual projects include various intersection improvements, traffic calming measures, and landscaping through Manila, as discussed in the Engineered Feasibility Study.

The City of Arcata has expressed interest in reconstructing the US 101/SR 255 interchange to a "dog bone" style with two teardrop roundabouts at either end of the interchange. This type of interchange has been successfully implemented by the City on US 101 in another location. This conceptual project would help to improve circulation and non-motorized access through a "road diet" on the interchange bridge, allowing for wider sidewalks and bike lanes.

# APPENDIX

## APPENDIX A: GLOSSARY OF TERMS AND ACRONYMS

**Acronyms**

| | |
|---|---|
| AADT | Annual Average Daily Traffic |
| ATP | Active Transportation Program |
| BY | Base Year |
| Caltrans | California Department of Transportation |
| DVMT | Daily Vehicle Miles Traveled |
| EFS | Engineered Feasibility Study |
| HAWK | High-Intensity Activated crossWalk |
| HY | Horizon Year |
| NOA | Naturally Occurring Asbestos |
| RTS | Redwood Transit System |
| SHS | State Highway System |
| SR | State Route |
| DSMP | District System Management Plan |
| MCTP | Manila Community Transportation Plan |
| TMS | Traffic Management System |
| TCR | Transportation Concept Report |
| TAADT | Truck Annual Average Daily Traffic |

## APPENDIX B: DEFINITIONS

AADT – Annual Average Daily Traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Traffic counting is generally performed by electronic counting instruments moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways and other purposes.

Base year – The year that the most current data is available to the Districts

Bikeway Class I (Bike Path) – Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized.

Bikeway Class II (Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway.

Bikeway Class III (Bike Route) – Provides for shared use with pedestrian or motor vehicle traffic.

Capacity – The maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Capital Facility Concept – The 20-25 year vision of future development on the route to the capital facility. The capital facility can include capacity increasing, State Highway, bicycle facility, pedestrian facility, transit facility (Intercity Passenger Rail, Mass Transit Guideway etc.), grade separation, and new managed lanes.

Concept LOS – The minimum acceptable LOS over the next 20-25 years

Conceptual – A conceptual improvement or action is a project that is needed to maintain mobility or serve multimodal users, but is not currently included in a financially constrained plan and is not currently programmed.

Corridor – A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included as informational purposes and not analyzed in the TCR.

Facility Type – The facility type describes the state highway facility type. The facility could be freeway, expressway, conventional, or one-way city street.

Freight Generator – Any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

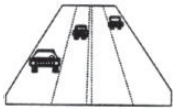
Headway – The time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

Horizon Year – The year that the future (20 years) data is based on.

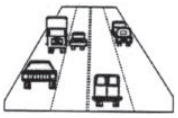
ITS – Intelligent Transportation System improves transportation safety and mobility and enhances productivity through the integration of advanced communications technologies into the transportation infrastructure and in

vehicles. Intelligent transportation systems encompass a broad range of wireless and wire line communications-based information and electronics technologies to collect information, process it, and take appropriate actions.

LOS – Level of Service is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels of LOS can generally be categorized as follows:



**LOS A** describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.



**LOS B** is also indicative of free-flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.

**LOS C** represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the presence of other vehicles.

**LOS D** demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.

**LOS E** reflects operations at or near capacity and is quite unstable. Because the limits of the level of service are approached, service disruptions cannot be damped or readily dissipated.

**LOS F** a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. This level, considered by most drivers unacceptable often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection.

Multi-modal – The availability of transportation options using different modes within a system or corridor, such as automobile, subway, bus, rail, or air.

System Operations and Management Concept – Describe the system operations and management elements that may be needed within 20-25 years. This can include Non-capacity increasing operational improvements (auxiliary lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristic (e.g. HOV lane to HOT lane), TMS Field Elements, Transportation Demand Management, and Incident Management.

Peak Hour – The hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – The hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Peak Period – is a part of the day during which traffic congestion on the road is at its highest. Normally, this happens twice a day, once in the morning and once in the evening; the time periods when the most people commute. Peak Period is defined for individual routes, not a District or Statewide standard.

Planned– A planned improvement or action is a project in a long-term financially constrained plan, such as an approved Regional Transportation Plan (RTP or MTP) or Capital Improvement Plan.

Post Mile – A post mile is an identified point on the State Highway System. The milepost values increase from the beginning of a route within a county to the next county line. The milepost values start over again at each county line. Milepost values usually increase from south to north or west to east depending upon the general direction the route follows within the State. The milepost at a given location will remain the same year after year. When a section of road is realigned, new milepost (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "milepost equations" are introduced at the end of each relocated portion so that mileposts on the reminder of the route within the county will remain unchanged.

Programmed – A programmed improvement or action is a project in a near-term programming document identifying funding amounts by year, such as the State Transportation Improvement Program or the State Highway Operations and Protection Program

Route Designation –A route's designation is adopted through legislation and identifies what system the route is associated with on the State Highway System. A designation denotes what design standards should apply during project development and design. Typical designations include but not limited to National Highway System (NHS), Interregional Route System (IRRS), Scenic Highway System,

Rural – Fewer than 5,000 in population designates a rural area. Limits are based upon population density.

TAADT – Truck Annual Average Daily Traffic is the total truck volume for the year divided by 365 days. The truck traffic count year is from October 1st through September 30$^{th}$. Truck traffic counting is generally performed by electronic counting instruments moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of truck traffic flow, evaluating traffic and goods movement trends, computing accident rates, planning and designing highways and other purposes.

## APPENDIX C: RESOURCES

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