



Transportation Concept Report

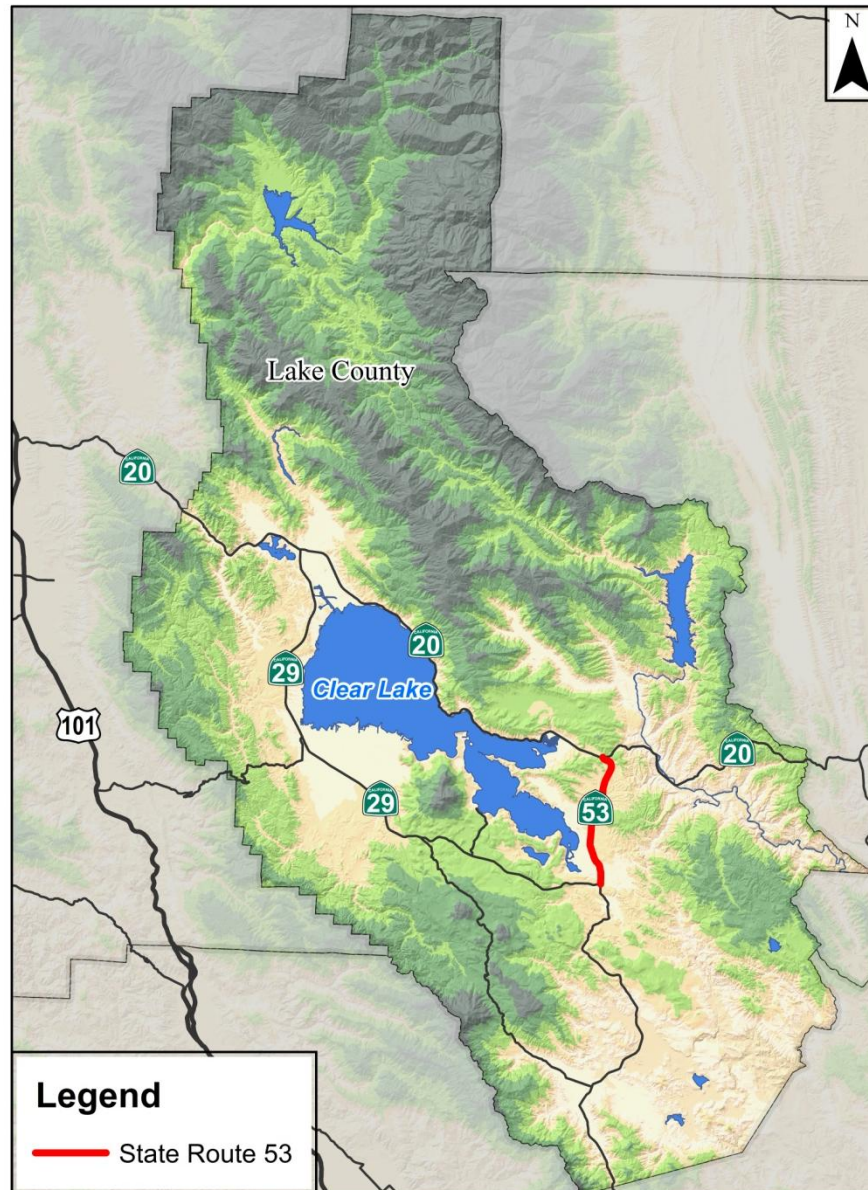
State Route 53

District 1

March 2014



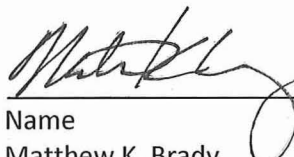
State Route 53 Overview Map



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California Department of Transportation
Caltrans Improves Mobility Across California

Approval Recommended:

 4-2-14
Name Date
Matthew K. Brady
Deputy District Director, Program Management
Caltrans District 1

Approval Recommended:


Name Date
Mark Suchanek
Deputy District Director, Maintenance/Operations
Caltrans District 1

Approval Recommended:

 4-1-14
Name Date
Brad Mettam
Deputy District Director, Planning/Local Assistance
Caltrans District 1

Approval:

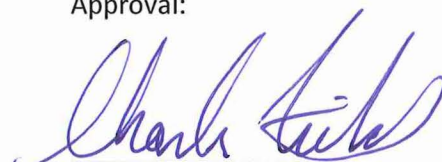
 April 2, 2014
Name Date
Charles C. Fielder
District Director
Caltrans District 1

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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 Lake County including the Lake County/City Area Planning Council, City of Clearlake, and Lake County Transit Authority. Additionally, copies of this TCR were sent to parties with interest in area including: The Koi Nation, The Elem Indian Colony, and Clearlake Chamber of Commerce. The draft TCR was circulated to other functional units within the District and Headquarters System Planning for compliance and compatibility with District and Statewide directives and policies. Input was received and revisions were made as appropriate.

EXECUTIVE SUMMARY

State Route 53 is a south to north route located on the eastern shore of Clear Lake in Lake County. Beginning at the junction of Route 29 in the unincorporated community of Lower Lake, Route 53 extends north into the City of Clearlake. After the City of Clearlake Route 53 proceeds through scattered agricultural land, terminating at the junction of Route 20, east of the community of Clearlake Oaks. The length of Route 53 is approximately 7.5 miles and has a postmile description of: 01-LAK-53-PM 0.00/7.445.

From its southern end (PM 0.0) Route 53 is classified as a 4-lane expressway into the City of Clearlake until the 40th Avenue intersection. From 40th Avenue Route 53 continues north as a 2-lane expressway through the City of Clearlake until the junction of Route 20 and Route 53. Route 53 is a portion of the “20/29/53/49 High Emphasis East/West Focus Route (20/29/53/49 Focus Route)” identified in the 2013 Interregional Transportation Strategic Plan (ITSP). All of Route 53 is functionally classified as a Principal Arterial, and the entire route is part of the Route 20 Principal Arterial Corridor (PAC).

Concept Summary

Segment (1-LAK-53)	Segment Description	Existing Facility	20-25 Year Capital Facility Concept	20-25 Year System Operations and Management Concept	20-25 Year Facility Concept	Post-25 Year Concept
1 (PM 0.0/2.96)	Junction SR 29 to 40 th Ave. City of Clearlake	4L-E	4L-F	Safety Improvements as Identified, Maintenance and Rehabilitation	4L-F	4L-F
2 (PM 2.96/7.445)	40 th Ave to Junction SR 20	2L-E	4L-F/E	Safety Improvements as Identified, Maintenance and Rehabilitation	4L-F/E	4L-F/E

C = Conventional

E = Expressway

CORRIDOR OVERVIEW

ROUTE SEGMENTATION

Segment #	Location Description	County-Route-Beginning PM	County-Route-End PM
1	Jct. SR 29/53 to 40 th Ave. in the City of Clearlake	1-LAK-53-0.000	1-LAK-53-2.960
2	40 th Ave in the City of Clearlake to Jct. SR 53/20	1-LAK-53-2.960	1-LAK-53-7.445

Route 53 Segment Map



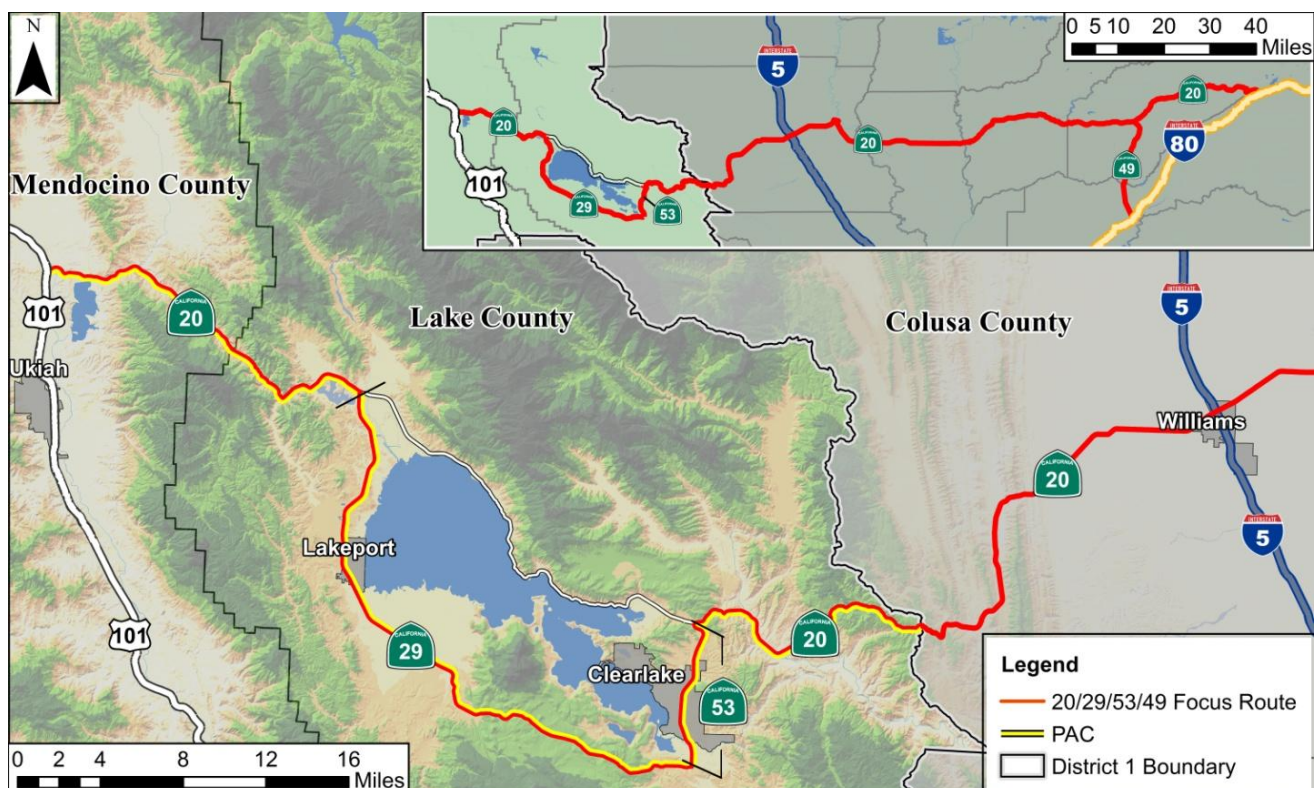
ROUTE DESCRIPTION

The ITSP identifies and prioritizes interregional state routes. Of these interregional routes, 34 are High-Emphasis Routes, critical to interregional travel. Ten Focus Routes are selected from the High-Emphasis Routes and are the highest priority for completion to minimum facility concept standards. As a portion of one of these Focus Routes, Route 53 is crucial to the movement of people, goods, and recreational travel across Northern California. The “20/29/53/49 Focus Route” avoids the North Shore portion of Route 20 by connecting Route 20 west of Clear Lake, Route 29, Route 53, Route 20 east of Clear Lake, and finally Route 49 as one Route. Furthermore, the “20/29/53/49 Focus Route” links the North Coast to the Central Valley and Sierra Nevada Mountains by connecting U.S. 101, I-5, SR 99, SR 70, and I-80.

The entire length of Route 53 is functionally classified as a Principal Arterial. Roadways functionally classified as Principal Arterials provide for mobility across distance by limiting interruptions and increasing travel speeds. Furthermore, Route 53 is a portion of the Route 20 Principal Arterial Corridor (PAC), a corridor connecting principal arterial sections of Routes 20, 29, and 53. By grouping these routes as one corridor the PAC allows for cohesive planning that promotes increased mobility between U.S. 101 near the City of Ukiah and I-5 in the city of Williams.

Within Lake County Route 53 serves local transportation needs for the City of Clearlake and surrounding agricultural lands. Route 53 is utilized for the transport of agricultural goods from field locations to production facilities. As a result of the unique layout of the City of Clearlake Route 53 is used extensively for local trips within the city. Additionally, Dam Road houses the primary bus stops for the City of Clearlake, and serves as the alternative bicycle and pedestrian facility for Route 53. Consequently, the intersection of Route 53 and Dam Road/Old Highway 53 is extensively used to travel between commercial and residential areas by pedestrian, bicycle, bus, and local traffic.

20/29/53/49 Focus Route, PAC



Route Designations and Characteristics:

Segment #	1 (PM 0.0/2.96)	2 (PM 2.96/7.445)
Freeway & Expressway	Yes*	Yes
National Highway System	Yes	Yes
Strategic Highway Network	No	No
Scenic Highway	Eligible	Eligible
Interregional Road System	Yes	Yes
High Emphasis	Yes	Yes
Focus Route	Yes	Yes
Federal Functional Classification	Rural Principal Arterial	Rural Principal Arterial
Goods Movement Route	Yes	Yes
Truck Designation	Terminal Access	Terminal Access
Rural/Urban/Urbanized	Rural/Urban Cluster	Rural/Urban Cluster
Regional Transportation Planning Agency	LC/CAPC	LC/CAPC
Local Agency	Lake County, City of Clearlake	Lake County, City of Clearlake
Tribes	Koi Nation, Elem Nation	Koi Nation, Elem Nation
Air District	LCAQMD	LCAQMD
Terrain	Rolling	Rolling

LC/CAPC Lake County City Area Planning Council

LCAQMD - Lake County Air Quality Management District

*From PM 0.0 to 0.637 Route 53 is a 4-lane conventional highway

COMMUNITY CHARACTERISTICS

From the 2000 to 2010 Census the population of Lake County grew from 58,309 to 64,665. During the same time the population of the City of Clearlake, the largest city in Lake County, grew from 13,142 to 15,250. This increase in population accounts for 33% of all population growth in Lake County between 2000 and 2010. According to the 2010 census the population of Lake County is comprised of about 74% White, 18% Latino, 4% Native American, and 2% Black. Of the 64,655 residents, nearly 18% are over 65, 58% are 21 – 65, and 24% are under 21. Both per capita and median household income are about two-thirds of the state average.

Government and health care account for about 45% of Lake County's employment, with trade/transportation/utilities making up another 20%. Furthermore, about 10% of Lake County's jobs come from tourism-related sources. According to the 2013 Caltrans Economic Forecast the unemployment rate in Lake County is 12.8%.

The City of Clearlake has a mixture of rolling terrain, winding roads, poorly paved roads, or unpaved streets/roads. According to the LC/CAPC *2011 City of Clearlake Pavement Management Report* 46.4% of roads are very poorly paved and 18.5% of roads are poorly paved. Due to this combination of poorly paved roads and terrain, Route 53 is an attractive choice for local trips as the terrain of Route 53 is predominately flat to slightly rolling, with better pavement conditions than those of local streets.

LAND USE

Route 53 traverses strip development through the unincorporated community of Lower Lake for nearly one mile then proceeds into the City of Clearlake as an expressway. Route 53 bisects the City of Clearlake, separating primarily residential development on the east side of Route 53 from mixed residential and commercial development on the west side of Route 53. Additionally, in the southeast corner of Clearlake there is a large retail location and community college isolated from the City of Clearlake by terrain and lack of city streets parallel to Route 53. Consequently, all traffic entering from the north or leaving to the north must use Route 53, whereas traffic entering or leaving to the south can utilize alternative facilities. Beyond the City of Clearlake, Route 53 traverses rural settlements and agricultural lands including: vineyards, oak flats, and open grasslands.

Recently Lake County has seen an increase in viticulture as the wine industry in Napa County expands north. The land use associated with the expansion of viticulture has included conversion of existing agricultural lands, predominately fruit and nut orchards, to vineyards as well as the conversion of open space land to vineyards. Additionally, Lake County is a popular recreation destination, and as such has seen an increase in the number of tribal casinos.

SYSTEM CHARACTERISTICS

Segment #		1 (PM 0.0/2.96)	2 (PM 2.96/7.445)
Existing Facility			
Facility Type		C/E	E
General Purpose Lanes		4	2
Lane Miles		11.84	8.97
Centerline Miles		2.96	4.485
Median Width		14	0
Median Characteristics		TWLT/Unpaved	N/A
Concept Facility			
Facility Type		F	F/E
General Purpose Lanes		4	4
Lane Miles		11.84	17.94
Centerline Miles		2.96	4.485
Post 25 Year facility			
Facility Type		F	F/E
General Purpose Lanes		4	4
Lane Miles		11.84	17.94
Centerline Miles		2.96	4.485
TMS Elements			
TMS Elements (BY)		Traffic Signals	Traffic Signals, Traffic Cameras, Changeable Message Signs
TMS Elements (HY)		Mainline Detection, Changeable Message Signs	Traffic Signals, Traffic Cameras, Changeable Message Signs

Conventional (C) Expressway (E) Freeway (F)

Caltrans' ability to forecast the future needs of the state highway system users is dependent on the ability to accurately measure the actual use of the state highway system over time. Currently on Route 53 there are two Traffic Census Stations: Ogulin Canyon Road (1-LAK-53-5.15) and the junction of Route 20 and Route 53 (1-LAK-20-31.525). In addition, the junction of Route 29 and Route 53 should be considered as a candidate for a new count station in order to improve Caltrans' ability to access current conditions as well as forecast future needs of Route 53 users.

BICYCLE FACILITY

Segment	Approximate Post Mile	Location Description	Bicycle Access Prohibited	Facility Type	Outside Paved Shoulder Width	Posted Speed Limit	Alternative Facility
1(PM 0.00-2.96)	0.000-2.96	Junction with SR-29 to South of 40 th Ave.	No	Shared	8-10 ft.	45/50/55	Dam Road, Old Highway 53, Lake Street
2 (PM 2.96-7.445)	2.96-4.9	North of 40 th Ave to Jct SR 20	No	Shared	4-8 ft.	50/55	Old Highway 53 to Olympic Drive

Bicycles are allowed on all State Highways within District 1, including Route 53. All of Route 53 has a minimum shoulder width of 4-foot or more, which is considered adequate for bicycle/pedestrian traffic.

In 2013 the existing Class II* bicycle facility on Dam Road was extended to connect with existing Class II facilities on Lake Road. The new continuous bicycle facility serves cyclists, especially students, traveling between Lower Lake and Clearlake. From Dam Road in the City of Clearlake the alternative bicycle facility crosses Route 53 at the Dam Road/Old Highway 53 intersection and continues along Old Highway 53 to Olympic Drive. After Olympic Drive there is no alternative bicycle facility to Route 53.

PEDESTRIAN FACILITY

Segment	Post mile	Location Description	Ped. Access Prohibited	Sidewalk Present	Shoulder Width	Facility Description	Alt. Facility
1	0.000-2.96	Junction with SR-29 to South of 40 th Ave.	No	Only at intersections	8-10 ft.	No obstruction, paved shoulder, limited sidewalk	Lake Street (PM-0.0/1.0) Dam Road (PM-1.0/1.5)
2	2.96-7.445	North of 40 th Ave. to Junction with SR-20	No	Only at intersections	4-8 ft	No obstruction, paved shoulder	Multiple within city limits, None Outside of the city limits

Within the City of Clearlake (PM-1.5/3.9) there are numerous city streets that would serve as alternatives to Route 53 for pedestrian traffic, although many of which would require out of direction travel.

The intersection of Highway 53 and Dam Road/Old Highway 53 is a frequently used pedestrian crossing. This area is frequented by college students and community members walking to the community college and large retail locations on Dam Road.

Caltrans is committed to complying with the Americans with Disabilities Act (ADA) improvements in conjunction with highway resurfacing, restoration, rehabilitation, or reconstruction. These improvements may include sidewalks or sidewalk infill on the east side of Route 53 in the community of Lower Lake.

* Full bicycle facility class definition available in Appendix B

TRANSIT FACILITY

Segment	Route	Mode & Collateral Facility	Service Provider	Route End Points	Stations	
					Cities	Postmiles
1-2	1	Traditional Bus*, Fixed Route	Lake County Transit	Clearlake to Lakeport	North Shore communities	PM-1.5, and SR 20/29
1	3	Traditional Bus, Fixed Route	Lake County Transit	Clearlake to St. Helena Hospital (Napa County)	Communities of Middletown and Lower Lake	PM-1.5 and SR 29
1	4	Traditional Bus, Fixed Route	Lake County Transit	Lakeport to Ukiah	South Shore communities	PM-1.5 and SR 29
1-2	5	Traditional Bus, Fixed Route	Lake County Transit	Operates as a loop from the Dam Road bus stop	Clearlake	PM-1.5 to PM-4.9
1-2	10	Traditional Bus, Fixed Route	Lake County Transit	Loop From Junction 29/53 to North end of the City of Clearlake	Clearlake, Lower Lake	PM-0.0 to PM-4.9
1-2	11	Traditional Bus, Fixed Route	Lake County Transit	Dam Road bus stop, North end of Clearlake (Senior Center stop)	Clearlake	PM-1.0 to PM-4.7
1-2	12	Traditional Bus, Fixed Route	Lake County Transit	Loop From Junction 29/53 to North end of Clearlake (Senior Center)	Clearlake, Lower Lake	PM-0.0 to PM-4.7

*Single deck bus approximately 30 passenger capacity.

In 2012 Lake Transit served 378,237 riders. Bus transit serves as the primary form of transportation for many Lake County residents due to a combination of Lake County's high percentage of residents above 65, lower than average income, and high unemployment rate.

Lake Transit provides fixed bus routes, regional flex route service, and local dial-a-ride services within Lake County. In addition Lake Transit also provides regional connections to St Helena Hospital in Napa County and the City of Ukiah in Mendocino County. The Ukiah service connects with intercity bus, since both Greyhound and AMTRAK busses serve the City of Ukiah.

Seven Lake Transit bus routes utilize and serve portions of Route 53:

- Bus Route 1, originates in the City of Clearlake, and uses Route 53 from Clearlake to Route 20 near the community of Clearlake Oaks, continuing on to the community of Upper Lake to Route 29, and the City of Lakeport. Service is provided Monday through Saturday, with nine trips per day in each direction, eight eastbound on Saturday.
- Bus Route 3, which originates in the City of Clearlake, uses Route 29 from Lower Lake to the Lake/Napa County line, and then continues to St. Helena Hospital in Napa County. Service is provided Monday through Saturday, with four trips per day in each direction.
- Bus Route 4, originates in the City of Clearlake, and uses Route 29 from Lower Lake to the City of Lakeport. Service is provided Monday through Saturday, with eight trips per day in each direction, and slightly reduced service on Saturday.

- Bus Route 5, a newly added bus route that originates at the Dam Street Bus stop in Clearlake, and serves the City of Clearlake. This route travels along Route 53 for the first leg of northbound travel, and crosses Route 53 once for northbound travel and once for southbound travel. This route operates Monday through Friday evenings and offers four trips per day.
- Bus Route 10 (North Loop), a new bus route that connects Lower Lake to Clearlake, traveling along Route 53 from PM 0.0 to PM 2.96 before continuing into the City of Clearlake north of PM 2.96. This route runs throughout the day with 14 trips per weekday, and 12 trips on Saturdays.
- Bus Route 11, travels along Route 53 from the Dam Road bus stop to 18th Street and then proceeds on surface streets through the City of Clearlake, crossing Route 53 at 40th Avenue. This recently added route offers 14 trips per day Monday through Friday, and 13 trips on Saturdays.
- Bus Route 12 (South Loop), a recently added bus route that connects Lower Lake to Clearlake. This bus route travels along Route 53 from PM 0.0 to PM 1.45 then continues into Clearlake via Old Highway 53. There are 17 weekday trips operating from 7AM to 10PM for this route, and 13 Saturday trips operating from 7AM to 6PM.

A map of the Lake County Transit routes is included in Appendix C.



Primary Bus stop for the City of Clearlake, located on Dam Road, at approximately LAK-53-1.48.

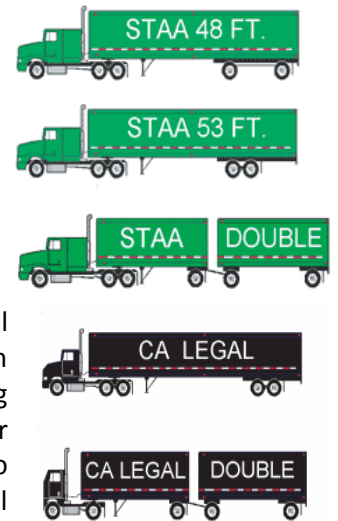
FREIGHT

Facility Type/Freight Generator	Location	Mode	Major Commodity/ Industry	Comments/Issues
Highway	Segments 1-2 (post miles 0.00/7.445)	Truck	General freight	STAA Terminal Access Route
Agriculture	Segments 1-2 (post miles 0.00/7.445)	Truck	Pear and Walnut	Off growing season, fruits shipped in from outside sources
Agriculture	Segments 1-2 (post miles 0.00/7.445)	Truck	Viticulture	Viticulture and Winemaking is increasing throughout Lake County

Route 53 is designated as a “terminal access route” for Surface Transportation Assistance Act (STAA) trucks. The STAA designation originated with the Interstate System, and these trucks are longer than “California Legal” trucks.

While no specific goods movement improvements are planned for Route 53 at this time, the planned improvement on Route 29 (01-LAK-29-23.80/31.60) to 4-lane expressway will benefit truck traffic utilizing the PAC.

As part of the PAC, Route 53 to Route 29 is the preferred route for truck transport. All trucks carrying hazardous material are prohibited from using the North Shore section of Route 20, due to the close proximity to Clear Lake. Therefore, trucks transporting hazardous material must take Route 29 and Route 53 around the south side of Clear Lake. Currently Route 53 is not favored by through truck traffic primarily due to signals through the City of Clearlake, steep sections of Route 29, and added travel distance.



ENVIRONMENTAL CONSIDERATIONS

Biological Resources

Lake County is home to many wetland habitats that support rare species of plants and animals unique to California. The wetlands in the vicinity of Route 53 include: marshes, vernal pools, small lakes, and streams. These wetlands include Anderson Marsh State Historic Park, which is included in the U.S. Fish and Wildlife Service *Vernal Pool Recovery Program*

The species in the table below are compiled from the California Natural Diversity Database and U.S. Fish and Wildlife Service.

SPECIES	DEPARTMENT OF FISH AND WILDLIFE STATUS
Bald Eagle	Federally Protected
Foothill Yellow-Legged Frog	Species of Special Concern
Golden Eagle	Federally Protected
Pallid Bat	Species of Special Concern
Valley Elderberry Longhorn Beetle	Threatened, Federally Protected
Swamp Larkspur	Watch List
Serpentine Collomia	Watch List
Tracy's Clarkia	Watch List
Cleveland's Milk-Vetch	Watch List
Burke's Goldfields	Endangered, Federally Protected
Lake County Stonecrop	Endangered, Federally Protected
Few-Flowered Navarretia	Endangered, Federally Protected

Hazardous Materials

According to the 2010 Caltrans *Naturally Occurring Asbestos, Aerially Deposited Lead and Landfill Site Investigation Report* for Route 53 the soil along Route 53 contains trace amounts of Naturally Occurring Asbestos (NOA), and contains Aerially Deposited Lead (ADL). The Report concludes that levels of ADL are not high enough to preclude soil from reuse onsite for projects along Route 53.

CULTURAL RESOURCES

The area that Route 53 travels through is part of the traditional homeland of the Pomo people. Route 53 passes through the ancestral lands of the Koi Nation and the Elem Indian Colony. Due to the presence of archeologically sensitive areas existing at locations along Route 53, both the Koi Nation and Elem Indian Colony should be consulted and coordinated with early in the project planning process, programming phases, and especially pre-construction.

CORRIDOR PERFORMANCE

Segment #	1 (PM 0.0/2.96)	2 (PM 2.96/7.445)
Basic System Operations		
AADT (Base Year)	17,500	8,500
AADT* (Horizon Year)	27,100	13,200
LOS Method**	HCM 2010	HCM 2010
LOS (BY)	C†	D
LOS (HY)	C†	E
LOS Concept***	C	C
DVMT (BY)	51,800	38,100
DVMT (HY)	80,300	59,100
Truck Traffic		
Total Average Annual Daily Truck Traffic (AADTT) (BY)	800	600
Total Trucks (% of AADT) (BY)	5.3%	5.9%
5+ Axle Average Annual Daily Truck Traffic (AADTT)(BY)	300	200
5+ Axle Trucks (as % of AADT)(BY)	1.71%	2.35%
Peak Hour Traffic Data		
Peak Hour Length	1	1
Peak Hour Direction	N	N
Peak Hour Time of Day	PM	PM
Peak Hour Directional Split (BY)	54/46	54/46
Peak Hour VMT (BY)	8,600	5,200
Peak Hour VMT (HY)	13,300	8,100

*Caltrans District 1 2013 20 year growth factors were used for traffic volume projections

** LOS analysis obtained using HCS 2010 software

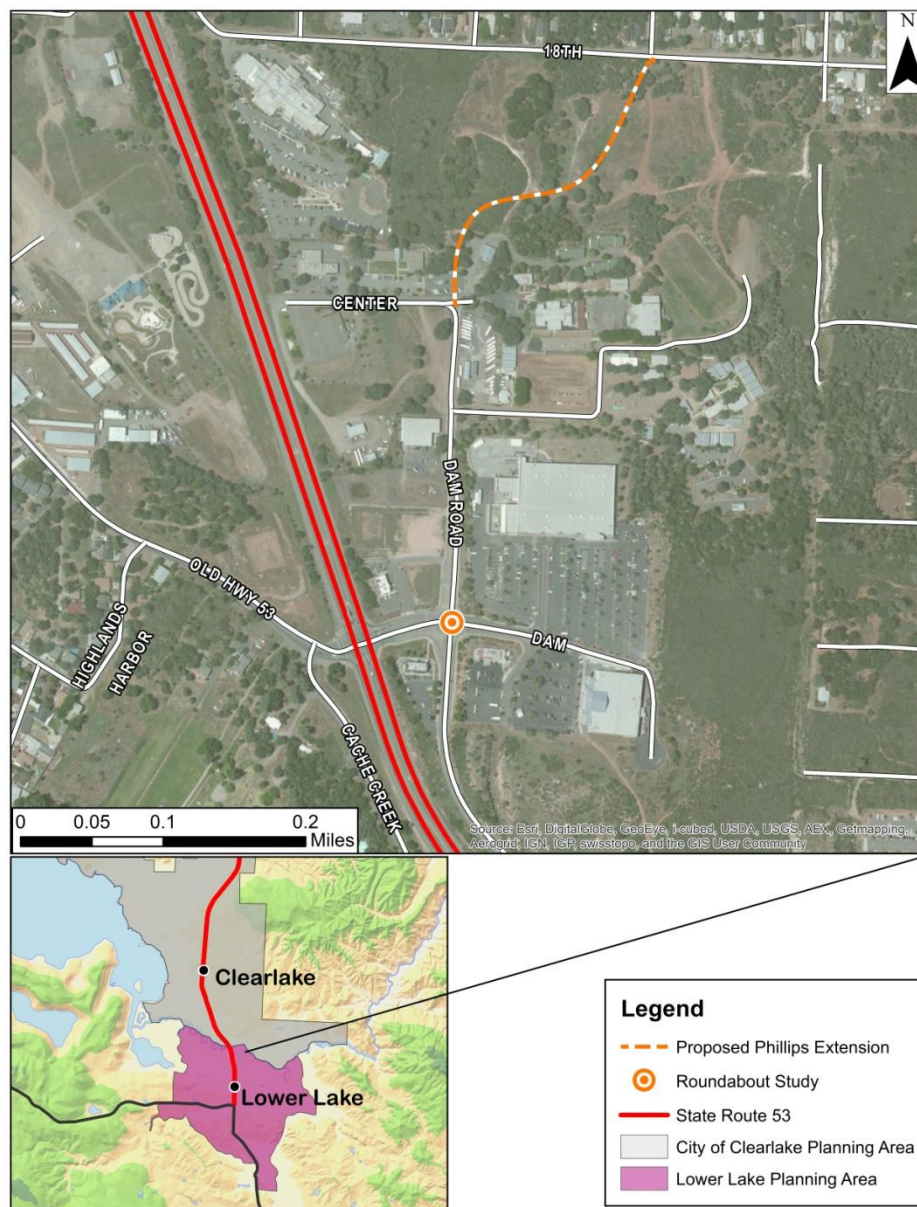
*** LOS Concept is for uninterrupted flow 4-lane freeway/expressway

† Segment 1 is considered an urban street; LOS for an urban street does not correlate to LOS for an uninterrupted flow

ADDITIONAL TOPICS

The LC/CAPC 2011 *State Route 53 Corridor Study* considered north/south extension of several streets in the City of Clearlake. The purpose of these improvements would be to increase local traffic circulation as well as reduce traffic volumes and turning movements on Route 53. The most significant of these is the extension of Phillips Avenue to Dam Road. As of 2013 the Phillips Avenue Extension has entered the environmental phase, and is a priority project for the LC/CAPC. Currently Route 53 is the primary route by which residents reach commercial shopping on Dam Road. The planned extension of Phillips Avenue could allow for traffic to travel between residential areas and commercial shopping on Dam Road without utilizing Route 53, thus reducing the number of local trips on Route 53. Additionally, the Phillips Avenue Extension would draw some pedestrian, bicycle, and bus traffic from Route 53. Caltrans District 1 strongly supports projects with the potential to improve local traffic circulation and reduce both traffic volumes as well as turning movements on the State Highway System.

Proposed Phillips Avenue Extension Map



ADDITIONAL TOPICS CONTINUED

The *2011 State Route 53 Corridor Study* also examined a roundabout at the intersection of Dam Road and Dam Extension with the intent of reducing congestion. Currently queuing from the Dam Road/Dam Extension intersection can back up onto Route 53. Consequently, in 2013 the City of Clearlake purposed a transportation planning project to the LC/CAPC; this project will determine the feasibility of a roundabout at the Dam Road/Dam extension intersection.

Due to Route 53's inclusion in the "20/29/53/49 Focus Route", Route 53 is directly affected by improvements to Route 20 and Route 29. In 2013 a project to widen an eight mile stretch of Route 29 (LAK-29-23.80/31.60) was programmed, and is expected to start construction in 2018. This project is designed to safely and effectively handle anticipated growth in the area as well as promote use of the "20/29/53/49 Focus Route."

KEY CORRIDOR ISSUES

DEVELOPMENT OF THE 20/29/53/49 FOCUS ROUTE

As a portion of the "20/29/53/49 Focus Route", the entire length of Route 53 will require a conversion to 4-lane freeway/expressway with segment 1 functioning as a freeway and segment 2 as a freeway or expressway. According to the *2012 Caltrans Highway Design Manual*: a freeway is a divided highway with full access control and grade separated intersections. Whereas, an expressway is a highway with partial access control with or without grade separated intersections.

Currently the Freeway Agreement calls for the closing of the Dam Road intersection with the completion of an interchange at 18th Avenue. The Freeway agreement requires this closure as the Dam Road intersection and the proposed 18th Avenue intersection are within one mile of each other. According to the *Caltrans Highway Design Manual* intersection spacing shall be 1 mile in urban areas and 2 miles in rural areas. Furthermore, the *2011 State Route 53 Corridor Study* identified alternatives to current intersections along Route 53. These included interim at-grade intersections and grade separated interchanges in over 20 alternative projects. The most promising interchanges were grouped together as "Group A" improvements. The "Group A" improvements for interchanges within Clearlake are:

- A Tight Diamond Interchange at Route 53 and Center Drive.
- A Tight Diamond Interchange at Route 53 and Yuba College Access Road.
- A Split Diamond Interchange utilizing Dam Road and 18th Avenue.

Additionally, the study also examined an alternative scenario where the Dam Road intersection was left in place and an interchange was constructed at 18th Avenue. Conversion of existing intersections to interchanges or selection of an alternative interchange location will require further study as well as collaboration with local transportation partners.

CORRIDOR CONCEPT

CONCEPT RATIONAL

The corridor concept for Route 53 consists of an ultimate facility concept and the selected level of service concept for Route 53. Improvements to the route are identified at locations where the concept level of service is not expected to be maintained through the planning period. In addition, the corridor concept serves as a guide for long range planning of route improvements. It functions to protect the State's investment in Route 53, while recognizing financial and environmental constraints, which will not allow the programming of extensive improvements for all State Highways.

The facility concept is consistent with the ITSP concept of Route 53 as a portion of the 20/29/53/49 Focus Route. In addition, the Facility Concept is also consistent with Route 53's functional classification as a Principal Arterial and role in the PAC.

ULTIMATE FACILITY CONCEPT

The ultimate facility concept for Route 53 is a 4-lane freeway/expressway over the entire length of the route: where segment 1 is converted to 4-lane freeway with grade separated interchanges and segment 2 is upgraded to 4-lane freeway/expressway.

LEVEL OF SERVICE CONCEPT

Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream and the perception of these operational conditions by motorists. An uninterrupted flow LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience[†].

The selected LOS concept for Route 53 is an uninterrupted flow, LOS C, where all of Route 53 functions as a freeway/expressway. Without improvements the LOS of Route 53 is predicted to fall to LOS E over the 20 year planning period. Whereas, Route 53 would function at a LOS B for the 20 year planning period if built to the ultimate facility concept described in ITSP.

[†] Full definition of LOS levels is available in Appendix B

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

Planned and Programmed Strategies

An Intersection Improvement study for the Junction of Route 20 and Route 53 began in 2013, and construction of an improved intersection is estimated to begin in 2017. In the summer of 2013, a 3-way signal, acceleration lane, and deceleration lane were installed at the intersection of Route 53 and Olympic Drive in conjunction with the repaving of segment 2.



Foreground, Route 20 exit to southbound Route 53. Background, Route 20/Route 53 Junction.

PROJECTS AND STRATEGIES TO ACHIEVE CONCEPT

Projects to Achieve the Ultimate Route Concept

Segment	Description	Location	Source	Purpose	Implementation Phase
1 (PM 0.0/2.96)	Convert existing 4-lane E to 4-lane F	Community of Lower Lake to City of Clearlake	Caltrans District 1	Safety, Capacity, and LOS Improvement	Long Term
1 (PM 0.0/2.96)	Improve traffic count capabilities	Junction of Route 29 and Route 53	Caltrans District 1	Improve highway use Information	Short Term
2 (PM 2.96/7.445)	Convert existing 2-Lane Expressway to 4-Lane F/E	City of Clearlake to Junction SR 20	Caltrans District 1	Safety, Capacity, and LOS Improvement	Long Term

Strategies to Achieve and Maintain the Ultimate Route 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 widening in conjunction with pavement rehabilitation projects where necessary to provide adequate paved shoulder width for both motorized and non-motorized traffic. Bridge replacement, storm damage and operational improvement projects will also be considered as necessary.
- **Access Management Strategy:** As residential and commercial development increases adjacent to Route 53, particularly within the vicinity of the community of Lower Lake, access points should be consolidated and/or minimized whenever possible. Safe access is a key component of the District's access management strategy. Access is managed via the Inter-Governmental Review (IGR) and encroachment permit processes.
- **Community Planning Strategy:** The District will cooperate with local transportation and land use planning agencies on Route 53 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:** The District 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.
- **Goods Movement Strategy:** Considerations should be made to ensure Route 53 functions as a Federal Surface Transportation Assistance Act (STAA) terminal access route, part of the Route 20/PAC, and as the mandatory route for trucks with hazardous cargo.

APPENDIX

APPENDIX A GLOSSARY OF TERMS AND ACRONYMS

Acronyms

AADT- Annual Average Daily Traffic
ADA – Americans with Disabilities Act of 1990
ADT- Average Daily Traffic
CALTRANS – California Department of Transportation
CMA- Congestion Management Agencies
CEQA- California Environmental Quality Act
CSS – Context Sensitive Solutions
FHWA – Federal highway Administration
FSR – Feasibility Study Report
FSTIP- Federal Statewide Transportation Improvement Program
FTIP – Federal Transportation Improvement Program
GHG- Green House Gas
GIS – Geographic Information System
HCP- Habitat Conservation Plan
IGR-Intergovernmental Review
ITS – Intelligent Transportation System
LOS – Level of Service
MPO- Metropolitan Planning Organizations
NOA – Naturally Occurring Asbestos
NCCP- Natural Community Conservation Plan
NEPA- National Environmental Policy Act
PA&ED – Project Approval and Environmental Document
PID-Project Initiation Document
PS&E – Plans Specifications and Estimate
PSR- Project Study Report
RHNA- Regional Housing Needs Allocation
RTP- Regional Transportation Plan
RTIP – Regional Transportation Improvement Program
RTPA- Regional Transportation Planning Agencies
SAFETEA - Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2005
SCS- Sustainable Community Strategies
SHOPP- State Highway Operation Protection Program
STIP – State Transportation Improvement Program
TEA-21 Transportation Equity Act for the 21st Century
TDM – Transportation Demand Management
TMS – Transportation Management System
TSN- Transportation System Network
VMT – Vehicle Miles Traveled

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.

Bottlenecks – A bottleneck is a location where traffic demand exceeds the effective carrying capacity of the roadway. In most cases, the cause of a bottleneck relates to a sudden reduction in capacity, such as a lane drop, merging and weaving, driver distractions, a surge in demand, or a combination of factors.

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.

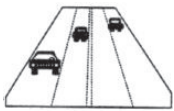
Headway – The time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

Horizon Year – The year that the future (20-25 years) data is based on.

Intermodal Freight Facility – Intermodal transport requires more than one mode of transportation. An intermodal freight facility is a location where different transportation modes and networks connect and freight is transferred (or “transloaded”) from one mode, such as rail, to another, such as truck.

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 is 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 (Aux. lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristic (e.g. HOV land 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 remainder 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.

APPENDIX C LAKE COUNTY TRANSIT FACILITIES MAP



Source: Lake Transit

APPENDIX D RESOURCES

WORKS REFERENCED

1987 Route 53 Route Concept Report
2005 Lake 20/29/53 Comprehensive Corridor Study
2010 Caltrans Naturally Occurring Asbestos, Aerially Deposited Lead and Landfill Site Investigation Report
2011 City of Clearlake Pavement Management Program Update Final Report
2011 Lake County Bike Plan
2011 Lake County Route 53 Corridor Study
2011 Truck Networks on California State Highways - District 1, June 23, 2011 revision
2012 Lake County Regional Transportation Plan
2012 Caltrans Highway Design Manual
2012 Caltrans Lake County Economic Forecast
2012 Smart Mobility Framework Factsheet
2012 State Transportation Improvement Program
2012 Traffic Volumes on California State Highways
2012 Transportation Concept Report Guidelines
2013 Interregional Transportation Strategic Plan Status Update
CA Natural Diversity Database
CRS Maps
District 1 North Region Work Plan Status
Lake Transit Authority Webpage
US Fish and Wildlife Service Species List