

U.S. 101 Central Coast California Freight Strategy

Appendix F. Strategies Recommendation

working paper

prepared for

AMBAG

prepared by

Cambridge Systematics, Inc.

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1.0 Introduction

This memorandum recommends strategies that can be used to address the needs along the U.S. 101 corridor in the Central Coast. Strategies can include both projects and programs. More than 100 strategies were initially identified as possibly benefitting freight movement on U.S. 101. Through a process of ranking, the final list reflects 20 high priority projects and several high priority programs for the five counties along the California Central Coast. The remainder of this memorandum is broken into four sections:

- Section 2.0 is a summary of needs identified in a prior task;
- Section 3.0 is a description of input received from stakeholders during public outreach;
- Section 4.0 highlights the methodology used to screen and rank strategies;
- Section 5.0 introduces the priority projects for the U.S. 101 study area; and
- Section 6.0 discusses the programs for the U.S. 101 study area.

2.0 Summary of Needs

The analysis conducted in the Existing Conditions memorandum helped identify initial needs and issues in the corridor. That quantitative analysis examined current conditions using twelve metrics to determine the corridor's performance in terms of three broad goals:

- Support economic development;
- Provide an efficient, reliable, well-maintained and safe goods movement facility; and
- Reduce and mitigate impacts from goods movement operations.

Table 2.1 below shows the goals, measures and performance metrics used to determine the corridor's condition, the current rating, and an explanation of that rating. Two metrics, tons of PM_{2.5}, PM₁₀, CO₂/N₂O and rail vehicle crashes at at-grade rail crossings, were determined to not be major issues in the study area. Two metrics, freight access/east-west connectivity and parking availability, were determined to be serious issues with poor current conditions. The other eight metrics were all rated as moderate needs.

Table 2.1 Current Conditions for the U.S. 101 Corridor

Goals	Measure(s)	Metric(s)	Current Condition Rating	Ratings Explanation
Support economic development	Access and Multimodal Connectivity	Freight routes access from/to locations with significant freight activities; east-west connection to parallel roadways; roadway/rail connectivity		Limited east-west connectivity to parallel routes leading to key freight markets was mentioned by several studies and stakeholders. Poor road infrastructure and travel conditions exist along East-West routes SR 156, SR 41, SR 46 and SR 166. Rail freight faces several challenges including a lack of truck to rail facilities, limited use, and limited capacity.
Provide an efficient, reliable, well-maintained and safe goods movement facility	Travel-time delay on truck routes – Recurrent and Seasonal	Truck delay/Travel Time Delay (TTD)		Truck delay is a moderate problem in the area, and is most significant in East Santa Barbara County to Ventura County line, North of Salinas, and between San Luis Obispo and Santa Maria. Given seasonal variations, during summer the delays can be worse due to peak harvest and tourist season. Weekend delays during peak tourist seasons can be as bad as weekday delay.
	Travel-Time Reliability	Planning time index/Travel Time Reliability (TTR)		Reliability is a moderate problem in the region. During the AM and PM peak, reliability is poorest along northbound U.S. 101 from Salinas to the Santa Clara County boundary, from the City of San Luis Obispo to Santa Maria, and in Eastern Santa Barbara to the Ventura County line.
	Freight-Related Crashes	Truck-involved crashes and crash rate		Intersection collisions are more severe than other types of collisions, and occur at uncontrolled intersections. Highway at-grade crossings are a safety concern along the corridor. Top crash areas include U.S. 101 at 156, U.S. 101 between SR 41, and SR 227, and U.S. 101 between SR 1 and SR 154.
		Rail Vehicle crashes at at-grade rail crossings		Safety at at-grade rail crossing is not a major issue in the study area.
	Freight Infrastructure Conditions	Bridge conditions rating		Bridge conditions along U.S. 101 are generally sufficient. However bridge conditions on intersecting and parallel routes, including SR 1,

Goals	Measure(s)	Metric(s)	Current Condition Rating	Ratings Explanation
				show a large number of structurally deficient and functionally obsolete structures with the worst rated bridges in Monterey and Santa Cruz County.
		Pavement condition rating		Segments identified for major or minor rehabilitation are concentrated in Monterey County between the Monterey/San Luis Obispo County border and the SR 156 interchange in Prunedale. There is also a concentration of high-priority segments from Santa Barbara to the Santa Barbara/Ventura County line.
	Trucking Parking	Number of parking spaces needed along corridor		Lack of truck parking has been an issue on the corridor for decades, especially for long-haul truckers who are subject to challenging Federal hours of service restrictions which require frequent rest periods. In addition, parking for deliveries and pickup is also inadequate.
	Truck Routes	Extent of Truck Routes Network		While U.S. 101 is well-signed and a designated truck route throughout the study area, the “first-and last-mile” routes that connect U.S. 101 to origins and destinations are often not designated as truck routes.
	Adoption of Advanced technologies	Degree of Implementation of ITS technologies		There is no single coordinated ITS system on U.S. 101, though there is some limited ITS technologies such as ramp metering.
Reduce and mitigate impacts from goods movement operations	Emissions and Air Quality	Tons of PM _{2.5} , PM ₁₀ , and CO ₂ /N ₂ O emissions from trucks.		Air quality in the region is generally good. Trucks produces less than 5 percent of PM _{2.5} pollution, and about 2.4 percent of PM ₁₀ pollution.
	Use of Clean Fuel Technologies	Use of Clean Fuel Technologies		Clean fuel technologies which are more appropriate for goods movement such as LNG are not currently being championed by the state. Lack of infrastructure also hinders clean fuel technology use.

 Good Conditions  Fair Conditions  Poor Conditions.

Extensive stakeholder outreach was used to validate the analysis in this report and determine if there were any topics unaccounted for. Overall, comments mirrored the needs identified during the quantitative analysis and gave the project team additional locally-based information on each issue. Specific comments included:

- The majority of north-south truck movement utilizing U.S. 101 in San Luis Obispo is heading to/from east-west routes to I-5 which connects to major ports, and the larger state and national highway system. The U.S. 101 corridor has few origin/final destination pairs that are both on the route.
- SR 46E should be the primary freight east-west freight corridor from San Luis Obispo County to I-5 and other major markets to the East. SR 41 is not suitable for heavy truck use due to poor terrain. Lack of passing lanes is a concern on most east-west routes.
- The interchange at U.S. 101 and SR 46E is a heavily congested area.
- There is a need for improved wayfinding signage and truck route identification along the U.S. 101 corridor.
- U.S. 101 is a critical alternative to I-5 during closures due to seasonal fires, mud slides, accidents, or more significant events such as earthquakes. It is also a strategic defense route for vehicles going to/from Vandenberg AFB. For these reasons, U.S. 101 needs to be a priority route for the state.
- At-grade intersections and other non-controlled access are a safety issue along the route because traffic entering and existing the highway may have to cross oncoming traffic.
- There are safety concerns about oil transportation by rail lines parallel to U.S. 101. This is a particular concern in southern Monterey and northern San Luis Obispo Counties where there are high-hazard areas with limited coverage from certified Hazardous Materials Teams.¹
- SR 156 near Alameda Road needs to be widened and access control implemented to address congestion, mobility, and quality of life issues.
- There are a high number of truck crashes on U.S. 101 between King City and Soledad. Between 2010 and 2012 there were 10 truck related incidents on this stretch of U.S. 101 resulting in two fatalities and thirteen injuries.
- There is a lack of alternative fueling stations on the southbound side of U.S. 101. Opportunities to expand the pipeline system in the areas should be explored to promote biodiesel and other alternative energy options in the corridor.
- There is a need for additional communication through ITS to better inform the public and truck drivers about periodic closures of U.S. 101, SR 129, SR 156 and SR 68.
- SR 129 from Watsonville to U.S. 101 is congested, especially at Watsonville.
- There is a lack of center dividers in medians along highway portions of U.S. 101 in San Luis Obispo County.

¹ California Office of Emergency Services. *Updated Gap Analysis for Rail in California*. March 13, 2015.

- Safety issues on SR 198. This route is generally seen as dangerous by stakeholders, though there was only a single incident involving a commercial vehicle on the route between 2010 and 2012.
- As a short-term issue in 2016-18, construction work on the California Flats Solar Project near SR 41 and 46 junctions in Cholame is expected to last two years and employ around 800 people, greatly increasing truck and construction vehicle traffic on these routes.
- There is a need for better incident management on I-5. In cases of incidents, trucks are diverting to U.S. 101, increasing congestion and truck VMT.

These comments were addressed with projects and program recommendations in this report as feasible.

3.0 Methodology for Project Prioritization

Over 100 projects were initially recommended along the Central California Coast that addressed multiple modes, routes, and needs and concerns. That list has been refined to a final set of 20 that represents the highest priority freight projects along the Central California Coast that can meet the project goals of supporting economic development, providing efficient, reliable, safe and well-maintained transportation assets, and reducing and mitigating impacts from goods movement.

Project prioritization started with an initial list of all potential projects that addressed goods movement needs. The project team collected the initial list of projects from the MPOs and RTPAs in the study area, the California Freight and Mobility Plan, freight industry representatives, the public, and other stakeholders. This initial list included over 100 major and minor projects impacting a number of different freight routes and modes in the study region.

This list was then edited to remove projects that would not accomplish the project goals. For example, landscaping projects that would not impact goods movement or projects on routes that have limited connectivity to U.S. 101 (SR 1 for example) were removed. Other projects, such as railroad siding projects which were identified at the county level and projects on consecutive road segments were combined whenever possible.

This process produced a refined list of 57 projects that could improve current conditions and help meet the goals of the plan (Appendix A). In order to provide a comparison between the projects, a numerical score was given based on four key criteria.

- A. The first score is based on the overall importance of the need, as determined by the *current condition* identified in the existing conditions section of this plan. To better prioritize conditions that need immediate attention, projects that address a corridor condition rated as poor received a higher score, while projects that address a corridor condition rated as good received a lower score. Projects that address a condition rated as poor (red) received an “H” high rating, those that address moderate needs (yellow) received a “M” medium rating, and those addressing low priority needs and issues (green) received a “L” low rating.
- B. The degree to which a project meets the goal of *supporting economic development*. For example, projects on east-west connecting routes from U.S. 101 to I-5, or which improve access to industry origins and destinations scored well in this category. Projects which promote multimodal freight shipping or

improve rail-road connectivity also score highly. These types of projects promote the economy by providing access and connectivity in the freight system.

- C. The degree to which a project meets the goal of *providing an efficient, reliable, well-maintained and safe goods movement facility*. For example, projects that can reduce travel-time delay and improve travel-time reliability on segments of U.S. 101 with poor ratings received high scores in this category. Projects that address truck parking also scored well here, as legal and safe parking is a key need.
- D. The degree to which the project meets the project goal of *reducing and mitigating impacts from goods movement operations*. For example, projects that promote the use of clean fuel technology or reduce truck emissions scored well.

Rankings for the above goals are based on project descriptions and the specific needs identified in the previous memoranda. For example, a freeway conversion in an area with high truck travel time delay (TTD) and a high planning time index which indicates a low travel time reliability (TTR) would get an “H” under the mobility goal. If there is no serious delay in that segment, it would get an “M” rating. Letter grades from these three goal areas were then converted to numeric scores (H=3, M=2, L=1) to calculate an overall score.

The top twenty projects in the region were compiled in the priority list of projects in the next section. In cases of a tie in composite score, projects that best emphasize freight issues were selected for inclusion in this list. For example, a project to expand truck parking facilities throughout the corridor would be included over a project that improved a single interchange since the interchange project is beneficial to freight traffic in one specific location, while the truck parking project would be specific to freight movement and would result in system-wide benefits for freight.

4.0 Priority Projects

Table 4.1 lists the top projects in each county based on a composite score.

Table 4.1 U.S. 101 Priority Projects by County

No.	County	Route or Facility	Project Description	Explicitly Freight?	Composite Score	Measure Addressed	Ratings Explanation
1	Monterey	SR 156	Add capacity and control access from Castroville Boulevard to U.S. 101. Convert to freeway and widen to four lanes. Two phases.	N	10	Access/Mobility, TTD, TTR, Potential Safety Improvement	Connecting route between 101 and SR 1. Congestion issues as described by stakeholders, intersection with 101 rated as one of the worst in the region.
2	Monterey	Hwy 101	U.S. 101 at Sanborn Rd (Salinas) Operational Improvements: modify southbound off-ramps to address truck congestion	N	8	TTD, TTR	Reliability and delay issues in segment. Stakeholders note congestion issues in Salinas.
3	Monterey	Hwy 101	U.S. 101 from Harris Rd to Russell Rd/ Espinosa Rd (north Salinas). Operational Improvements: modify interchanges; ramp metering	N	8	TTD, TTR,	Reliability and delay issues in segment. Stakeholders note congestion issues in Salinas.
4	San Benito	SR 152	New alignment of SR 152 between 101 and the Merced County line, including changes in Santa Clara County, and adding an eastbound truck climbing lane over Pacheco Pass	N	10	Access/Mobility, TTD, TTR, Potential Safety Improvement	Main east-west connection U.S. 101 to I-5. E-W connectivity mentioned by stakeholders to be very important.
5	San Benito	SR 25	New four-lane highway from San Felipe Road in Hollister to Hudner Lane North of SR 156, 3.8 miles total	N	10	Access/Mobility, TTD, TTR	Connection between U.S. 101 and SR 156.
6	San Benito	SR 156	Add capacity and control access from Alameda St to San Benito River Bridge. Widen to 4 lanes.	N	8	Access/Mobility, TTD, TTR	Project is currently fully funded, and will help ease congestion.
7	San Luis Obispo	Santa Maria Valley Railroad	Reactivate train yard in San Luis Obispo	Y	11	Access and Multimodal Connectivity	Shifting a portion of goods movement from truck to rail improves traffic conditions for freight and regular traffic on the highway system.

No.	County	Route or Facility	Project Description	Explicitly Freight?	Composite Score	Measure Addressed	Ratings Explanation
8	San Luis Obispo/Santa Barbara	SR 166	Operational improvements: new passing lanes	Y	10	Access/Mobility, TTD, TTR, Potential Safety Improvement	Improves east-west connections between U.S. 101 and I-5, improving freight access to and from Santa Maria Valley and surrounding agricultural areas, and facilitating improved freight access to major markets.
9	San Luis Obispo	SR 46	Fix low clearance issue for large freight trucks at overpasses	Y	10	Access and Multimodal Connectivity	Some railroad and highway overpasses create low clearance hazards for wide/heavy loads.
10	San Luis Obispo	Hwy 101	SR 46 East interchange Northbound off-ramp	N	9	Access/Mobility, TTD, TTR	Moderate travel time volatility in this section due to congestion. Stakeholders note high congestion and safety issues at interchange.
11	San Luis Obispo	SR 46	SR 46 Shandon to Kern County. Add Capacity: widen to 4 Lanes; expressway conversion; modify intersection to address congestion and truck mobility	N	9	Access/Mobility, TTD, TTR	Improves main east-west connection U.S. 101 to I-5.
12	San Luis Obispo	SR 46	SR 46 from Shandon Rest Area to 41/46 Wye. Operational Improvements: new interchange to improve corridor and truck mobility	N	9	Access/Mobility, TTD, TTR	Improves main east-west connection U.S. 101 to I-5.
13	San Luis Obispo	Hwy 101	Interchange Improvements on Southbound/Northbound ramps at SR 166 and Thompson Ave intersection	N	8	Access/Mobility, TTD, TTR	Improve poor reliability in section north of interchange.
14	San Luis Obispo	Hwy 101	Operational Improvements: new SB climbing lane on U.S. 101 from Brisco Rd/Halcyon Rd to Oak Park Blvd	Y	8	TTD, TTR	Improves poor reliability and delay in both AM and PM Peak along this segment (south of Pismo Beach).
15	Santa Barbara	Union Pacific	Construct new rail sidings throughout the rail line in Santa Barbara County. Ortega siding six miles south of Santa Barbara Train Station and other sidings	Y	9	Access and Multimodal Connectivity	Providing additional rail sidings to allow for additional capacity and reduced delays for rail freight.

No.	County	Route or Facility	Project Description	Explicitly Freight?	Composite Score	Measure Addressed	Ratings Explanation
16	Santa Barbara	U.S. 101	Relocate and expand Gaviota roadside rest areas Northbound and Southbound to better accommodate freight truck parking	Y	8	Truck Parking	Need for additional truck parking for long-haul truckers.
17	Santa Barbara	U.S. 101	U.S. 101 from Carpinteria to Santa Barbara: add high-occupancy vehicle lanes to reduce commuter and truck congestion; modify interchange at Hot Springs Road/Cabrillo Boulevard and North Jameson Lane and U.S. 101	N	8	TTD, TTR, Potential Safety Improvement	Addresses poor reliability, delay, and high crash rates along this segment.
18	Santa Barbara	SR 166	Add Capacity & Access Control on SR 166 from Guadalupe to Santa Maria: Widen to four lanes to reduce congestion and improve truck mobility	N	8	Access/Mobility, TTD, TTR, Adoption of Advanced Technology, Potential Safety Improvement	This is a top priority connection mentioned by stakeholders as this area is a key origin, destination, and staging area for truck freight in the San Luis Obispo/Santa Barbara Counties area.
19	Santa Cruz	Iowa Pacific	Construct transload facility at Watsonville to facilitate truck loading onto rail, increase rail shipping, and reduce truck traffic on roadways	Y	10	Access and Multimodal Connectivity	Accessibility to rail was mentioned as important by stakeholders
20	Santa Cruz	Union Pacific	Upgrade rail to Federal Rail Administration Class 2 rail, allowing freight train speeds of up to 25 MPH on sections of rail throughout Santa Cruz County	Y	8	Access and Multimodal Connectivity	Rail mobility is mentioned as important for stakeholders

Source: Individual sources for projects are identified in the Table in the Appendix (Section 5). TTD = Travel Time Delay; TTR = Travel Time Reliability.

5.0 Programs and Other Recommendations

While it is important for the plan to identify specific projects to fund, many other needs cannot be addressed with a specific project but is still worthy to prioritize. In those instances, a program is needed to address the particular issue. This plan prioritizes the development of these programs to facilitate seeking funding as appropriate.

5.1 Intelligent Transportation System Program

This program would implement projects developed in the Central Coast ITS System Plan as identified and discussed below. Cost estimates for each system are taken from the *Central Coast ITS Implementation Plan* which was finalized in 2007.²

Changeable Electronic Message Sign (CMS)

This program would seek to add additional electronic changeable message signs along U.S. 101 and key east-west routes, including State Routes 198, 46, 41, 58, and 156. Signage would provide information related to congestion, scheduled road work, detours, safety, and recommended truck routes, in addition to information for regular traffic. Signs will be integrated with Caltrans District 5 Traffic Management Center. Signs can either be placed permanently above the roadway or as mobile units placed along the side of the highway. Caltrans' QuickMap website, which provides real-time traffic data online, does not indicate any operating CMS on the U.S. 101 Corridor or the key State Routes identified above.³

Closed-Circuit Television Cameras

Closely linked with the need for CMS is the addition of CCTV monitoring cameras along U.S. 101 and key east-west intersecting routes to fill gaps in the existing CCTV network. Cameras allow responders to quickly find an incident location and operations personnel to monitor weather, congestion, or other conditions of the roadway and transmit that information to changeable message signs or public alert systems. There is a significant gap in CCTV coverage on U.S. 101 between Paso Robles and Salinas, a similar gap between Santa Barbara and Santa Maria, and no coverage on the key east-west State Routes that link U.S. 101 and I-5. All project components will integrate into the Caltrans QuickMap website which provides real-time access to CCTV and electronic message sign information.

Ramp Metering Program

This ITS feature is essentially a stop light on a highway entrance ramp which controls vehicle entry onto the highway at a slower rate in order to maintain the flow of existing highway traffic and prevent bottlenecks. This increases safety, produces more consistent and reliable travel times, and helps smooth traffic flow on the main road for all vehicles. This program would implement a ramp meter program on U.S.101 and key east-west routes including 198, 46, 41, 58, and 156, emphasizing onramps particularly congested during peak

² Association of Monterey Bay Area Governments & CCITS Coordinating Group. *Central Coast ITS Implementation Plan*. Fall 2007. Online at: http://local.iteris.com/ccits-admin/assets/CCITS_Imp_Plan_complete_2.pdf.

³ <http://quickmap.dot.ca.gov/>.

harvest season times. This program would relieve harvest season agricultural related shipping peaks and improve the efficiency and safety of the U.S. 101 Corridor.

Costs for the technology described above are identified in Table 5.1 below.

Table 5.1 ITS Technology Costs (2007 Estimate)

Technology	Capital Cost (per Unit)	Additional Costs ^a	Total Cost	Operations and Maintenance
Closed Circuit Television Camera	\$46,000	\$23,000	\$69,000	\$4,600
Ramp Metering	\$63,250	\$31,625	\$94,875	\$6,325
Changeable Message Signs (Fixed)	\$230,000	\$115,000	\$345,000	\$23,000
Changeable Message Signs (Portable)	\$149,500	\$75,000	\$224,250	\$14,950

Source: http://local.iteris.com/ccits-admin/assets/CCITS_Imp_Plan_complete_2.pdf.

^a Additional costs include Project Admin (10 percent), Reqs and Design (15 percent), Installation and Integration (15 percent), and Testing and Evaluation (10 percent).

5.2 Grade Crossing Improvement Program

The goal of this program would be to improve at-grade highway interchanges and intersections. Highway interchanges and at-grade intersections are one of the largest safety concerns in the U.S. 101 Corridor. Highway interchanges, especially with SR 156 and SR 41/46 are some of the most congested locations on U.S. 101, and increased congestion typically results in increased potential for collisions. Between 2010 and 2012, U.S. 101 and SR 156 in Monterey and San Benito Counties saw 20 incidents involving trucks that claimed two lives and injured 30.

At-grade intersections are also recognized as safety hazards due to the high speeds involved and potential for more dangerous types of incidents. Interviews with stakeholders identified highway at-grade intersections as one of the largest safety concerns in the corridor. Although the total number of incidents at these locations was low, they represent a significant percent of the injuries caused by truck-related crashes.

Freight Parking Program

A lack of legal and safe truck parking has been identified in numerous plans as a challenge for commercial vehicle movements along the U.S.101 Corridor. At the national level, FHWA released the results from Jason's Law Truck Parking Survey in August 2015. This report was required as part of Jason's Law and incorporated into MAP-21. Jason's Law was named in honor of a trucker who was robbed and murdered while parked at an abandoned gas station waiting for his delivery location to open. The study found an inadequate supply of truck parking spaces nationwide, resulting in tired drivers remaining on the road beyond their legal hours in order to find a safe space, or stopping in unsafe locations.

Truck parking is difficult to expand due to capital and operating costs and difficulty in identifying suitable locations. Freight, especially truck traffic, is often seen as having a negative impact on local roads. Most municipalities want to limit the number of trucks in their region, and building a truck stop, especially if it is not immediately adjacent to a highway, are likely to increase truck traffic. Because land use zoning is controlled at the local level, municipalities may restrict the ability of private operators to open a truck stop.

A program should be developed to incentivize the creation of additional truck parking along the U.S. 101 corridor. A feasibility and truck intercept study should be undertaken in the corridor to determine the best locations for additional parking based on truck origins/destinations and truck needs. State and regional governments need to work with local municipalities to ensure that there is an available supply of appropriately zoned land to allow for parking. If a private facility is pursued, incentives may be required to attract a private developer to build a facility.

The National Coalition on Truck Parking which will begin meeting in December 2015 may develop new recommendations that could help municipalities and regions that are facing truck parking shortages. Stakeholders in the study region should closely monitor this group's proceedings and aid in data collection or other activities as best as possible.

5.3 Truck Route Signage Improvement Program

Only fourteen municipalities and counties in the study region currently have truck routes. Expanding the number of municipalities with designated truck routes and improving truck route education amongst drivers will help focus truck trips on routes that can best handle the traffic. Locally based truck route analyses, improved signage, and improved truck route education programs can improve goods movement into and out of freight nodes located in cities and counties along the U.S. 101 corridor.

While U.S. 101 is well-signed as a designated truck route throughout the study area, the “first- and last-mile” routes that connect U.S. 101 to origins and destinations near the highway are not well signed. Most businesses that utilize U.S. 101 are located off of local streets. Improving signage for routing trucks between U.S. 101 and local roadways is critical to efficiency and safety of truck-based goods movement and will reduce wear and maintenance costs for local roads. This will also save time and money for carriers by reducing delays related to truckers taking long detours after entering local roads with insufficient turn space, insufficient overhead clearance, or other navigational barriers. This program should accomplish two objectives: (1) Designating and improving truck routes to better guide truck movement to/from U.S. 101, and (2) Employing wayfinding tools to help trucks find fueling stations, parking locations, key freight origins and destinations, or other truck related infrastructure located in local municipalities.

While key wayfinding guides can be implemented along the U.S. 101 at a regional level, there should be additional freight truck guidance at the local level. This program should be implemented at the local level in a way that takes into consideration locally specific truck routing issues in each City and County. A key step in designing an local truck signage program is performing a truck routing analysis on local streets to identify critical truck routes between U.S. 101 and local origins and destinations. Leveraging existing resources, Cities and Counties may build off of the truck volume analysis and needs identified in this study and truck movement data found in the Regional Travel Demand Models maintained by regional Metropolitan Planning Organizations. A truck routing analysis should also contain an assessment of jurisdictionally-specific issues and truck routing concerns.

Signs to help direct pedestrian or tourist traffic are common in most towns and cities. However, signs to direct commercial vehicle traffic are limited. A comprehensive local truck routing analysis should lead to recommendations on how to improve the existing truck signage network, including standards for signage, improved signage, and demarcation along the truck route network. For example, major entrance and exit points along U.S. 101 should have standardized signage directing trucks to fueling stations, parking or rest areas, and major freight sites nearby. This would help trucks avoid getting lost, protecting roadway

infrastructure, and reducing the miles traveled and emissions produced as truckers search for amenities. A similar program is currently being developed in the San Francisco Bay Area.

An education program would facilitate a self-enforcing truck route program. Among truck drivers there is a lack of awareness about City and County-based truck routes, related regulations, and policies. Further complicating the issues, there is a lack of truck route information available from local jurisdictions, with only one municipality in the region providing truck route information in an easily accessible map. An education program would improve understanding about designated routes and policies, providing for a higher level of voluntary adherence to truck route regulations and policies. It is recommended that jurisdictions work with external partners such as business associations, trucking associations, industry associations, and individual businesses to expand outreach through the distribution of maps, truck route information, and regulations. Jurisdictions should also pursue increased dialogue and interaction with local stakeholders to understand the needs of individual users.

5.4 Early Environmental Impact Report for Freight Industrial Zones

For Cities and Counties interested in attracting freight business and infrastructure, pre-approving freight, agricultural processing, and transportation/shipping uses through an Early Environmental Impact Report (EIR) in industrially zoned areas is an incentive to attracting freight related businesses. This allows freight related companies to quickly deploy facilities throughout the region with a minimum of up-front cost. EIR costs can be recouped by the implementing agency through an EIR repayment fee levied upon on the properties covered by the EIR, spreading out EIR costs among freight related businesses, and spreading the up-front environmental costs over a longer-term period, making these costs more manageable for freight businesses.

Appendix A.

The following table lists all of the projects in the study area that would help meet the three goals identified in this plan. The top 20 projects listed in this plan were extracted from this list through the grading process indicated in the plan. Specific project ratings as well as sources of the projects are also included.

County	Route or Facility ID	Project Category	Project Location/ Description	Overall Importance of Need	Economic Goal	Mobility Goal	Environmental Goal	Composite Score	Source of Project
Monterey	SR 156	Capacity Expansion. Modify interchange	Add capacity and control access from Castroville Boulevard to U.S.101. Convert to freeway and widen to four lanes	H	H	H	L	10	CFMP
	Hwy 101	Modify ramps	U.S. 101 @ Sanborn Rd (Salinas) Operational Improvements: modify SB off-ramps to address truck congestion	H	L	H	L	8	CFMP
	Hwy 101	Modify ramps. ITS	U.S. 101 from Harris Rd to Russell Rd/Espinosa Rd (north Salinas). Operational Improvements: modify interchanges; ramp metering	H	L	H	L	8	CFMP
	River Road (SR 68 to Arroyo Seco Rd)	Route designation	Designate River Road as a tourism/ freight wine corridor between Salinas and Soledad, parallel to U.S.101	H	M	L	L	7	Projects via Email
	Intermodal	Intermodal	Construct a new intermodal truck-rail facility Gonzales or Chualar along UP Coast Mainline	L	M	L	H	7	CFMP
	Hwy 101	Capacity Expansion	Salinas Corridor (Widening)	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Harris Road Interchange	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Sanborn/Elvee	M	L	H	L	7	MTP/SCS RTP/SCS

County	Route or Facility ID	Project Category	Project Location/ Description	Overall Importance of Need	Economic Goal	Mobility Goal	Environmental Goal	Composite Score	Source of Project
Monterey (continued)	Hwy 101	New Road	U.S. 101 from Soledad to Harris Rd/Abbott St (south Salinas). Freeway Conversion: new frontage roads (Phase 1) & new interchange at Harris Rd (Phase 2) to address corridor and truck mobility	H	L	M	L	7	CFMP/TAMC FTP
	Hwy 101	Modify interchange	1st Street Interchange	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Gloria Road Interchange Improvements	L	L	M	L	5	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Walnut Ave Interchange	L	L	M	L	5	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	North and South Interchange (Front Street), Soledad?	L	L	M	L	5	MTP/SCS RTP/SCS
Regionwide	Hwy 101	Truck Parking	Additional truck parking locations. Reduce frequency and length of closures at existing public rest stop and truck parking locations, expand truck parking capacity at existing rest areas, and add new rest areas catering to truck drivers	H	L	H	L	8	Email Conversations
	TBD	Truck Parking	Truck service enterprise zone/ trucking priority development zone. Encourage establishment of new private truck stops which cater to freight truck drivers such as Pilot Flying J travel centers.	H	L	H	L	8	Email from Paul
San Benito	SR 152	New truck infrastructure	New alignment of SR 152 between 101 and the Merced County line, including changes in Santa Clara County, and adding an eastbound truck climbing lane over Pacheco Pass	H	H	H	L	10	FTP Folder
	SR 25	New Road	New four-lane highway from San Felipe Road in Hollister to Hudner Lane North of SR 156, 3.8 miles total	H	H	H	L	10	FTP Folder
	SR 156	Capacity Expansion.	SR 156 Alameda St. to San Benito River Bridge. Add Capacity & Access Control: widen	H	L	H	L	8	CFMP

County	Route or Facility ID	Project Category	Project Location/ Description	Overall Importance of Need	Economic Goal	Mobility Goal	Environmental Goal	Composite Score	Source of Project
		ITS	to 4 lanes to address congestion and truck mobility						
San Luis Obispo	Santa Maria Valley Railroad	Rail Capacity	Reactivate train yard in San Luis Obispo	H	H	M	L	11	Projects via Email
	SR 166	New truck infrastructure	Operational Improvements: new passing lanes	H	H	H	L	10	CFMP
	SR 46	Modify clearance	Fix low clearance issue for large freight trucks at railroad overpass	H	H	H	L	10	SLO Meeting notes
	Hwy 101	Modify interchange	SR 46E interchange Northbound off-ramp	H	M	H	L	9	MTP/SCS RTP/SCS
	SR 41	New truck infrastructure	Operational Improvements: new climbing lane	H	M	L	L	7	CFMP
	SR 46	Capacity Expansion. Modify interchange	SR46 Shandon to Kern County. Add Capacity: widen to 4 Lanes; expressway conversion; modify intersection to address congestion and truck mobility	H	H	M	L	9	CFMP
	SR 46	New Interchange	SR 46 from Shandon Rest Area to 41/46 Wye. Operational Improvements: new interchange to improve corridor and truck mobility	H	H	M	L	9	CFMP
	Hwy 101	Freeway Conversion	freeway conversion: Arroyo Grande to Los Berros Rd	M	L	H	L	7	MTP/SCS RTP/SCS
San Luis Obispo	Hwy 101	Freeway Conversion	expressway conversion: Monterey St. to SR 58	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Santa Rosa St and Broad Street Interchange	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Tefft St Interchange	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify Ramps	Traffic Way SB ramps	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	New truck	Arroyo Grande to Pismo Beach. Multiple	M	L	H	L	7	FTP Folder

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		infrastructure. Modify ramps	projects within segment. MP 16 to MP 21. Major elements include ramp reconfiguration @ Dinasauro Caves Park SB and Spyglass Hill truck climbing lane						
	Hwy 101	Freeway Conversion	San Miguel freeway conversion	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Santa Barbara Rd Interchange	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Main St Interchange Improvements	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	San Anselmo Rd Interchange Improvements and Hwy 101 Rosario Ave Interchange	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	U.S. 101 at Wellsona Rd (North of Paso Robles). Freeway Conversion: new interchange to address corridor and truck mobility	L	L	M	L	5	CFMP/MTP.S CS
	Hwy 101	Modify interchange	Interchange Improvements SB/NB ramps and SR 166 and Thompson Ave intersection	M	M	H	L	8	MTP/SCS RTP/SCS
	Hwy 101	New truck infrastructure	U.S. 101 from Brisco Rd/Halcyon Rd to Oak Park Blvd. Operational Improvements: new SB climbing lane	H	L	H	L	8	CFMP
Santa Barbara	Union Pacific	Rail Capacity	Construct new rail sidings throughout the rail line in Santa Barbara County. One location specified- Ortega siding six miles south of Santa Barbara Train Station	H	H	M	L	9	CFMP
	Hwy 101	Truck Parking	Relocate and expand Gaviota roadside rest areas Northbound and Southbound to better accommodate freight truck parking	H	L	H	L	8	CFMP
	Hwy 101	Capacity Expansion	Extended 3rd NB lane, Fairview to Glen Annie Rd.	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	ITS	Patterson Avenue Ramp Meter	M	L	H	L	7	MTP/SCS RTP/SCS

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	Hwy 101	ITS	Intelligent Transportation System (ITS) Ramp Metering	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Linden Ave/Casitas Pass Interchanges Widening Phase 3	M	L	H	L	7	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	San Ysidro Interchange Improvement	M	L	H	L	7	MTP/SCS RTP/SCS
	Union Pacific	Rail Capacity	Centralized Traffic Control	L	H	M	L	7	CFMP
	Hwy 101	Capacity Expansion	Widening from Clark Ave to Santa Maria Way	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	McCoy Interchange	M	L	M	L	6	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	SR 135 Interchange (Santa Maria)	L	L	M	L	5	MTP/SCS RTP/SCS
	Hwy 101	Modify interchange	Castillo Interchange Improvement (Castillo Street)	L	L	M	L	5	MTP/SCS RTP/SCS
	SR 1	Modify ramps	U.S. 101 at Betteravia Rd (South Santa Maria). Operational Improvements: modify NB on-ramp to address truck congestion	L	L	M	L	5	CFMP
Santa Barbara (continued)	Union Pacific	Rail Capacity	Track realignment	L	M	L	L	5	CFMP
	Union Pacific	Rail Crossing	Track realignment; overpass replacement	L	L	M	L	5	CFMP
	Hwy 101	Capacity Expansion. Modify interchange	U.S. 101 from Carpinteria to Santa Barbara: Add HOV lanes to reduce commuter travel and truck congestion; modify interchange at Hot Springs Road/Cabrillo Boulevard and North Jameson Lane and U.S.101	M	L	H	M	8	CFMP
	SR 166	Capacity Expansion. ITS	Add Capacity & Access Control on SR 166 from Guadalupe to Santa Maria: Widen to four lanes to reduce congestion and improve truck mobility	H	L	H	L	8	CFMP
Santa Cruz	Iowa Pacific	Intermodal	Construct transload facility at Watsonville to facilitate truck loading onto rail, increase rail	H	H	L	H	10	Projects via

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			shipping, and reduce truck traffic on roadways						Email
	Union Pacific	Rail Capacity	Upgrade rail to Federal Rail Administration Class 2 rail, allowing freight train speeds of up to 25 MPH on sections of rail throughout Santa Cruz County	M	H	M	L	8	CFMP

Source: Projects were received from a number of sources including the California Freight and Mobility Plan (CFMP), emails from stakeholders, and project lists and emails from MPO staff in the study region.