Alameda County Goods Movement Plan

Needs Assessment and Strategies Review

Technical Team

February 4, 2015

Review of Last Meeting and Today's Agenda

- Initiated Review of Needs Assessment Report
  - *Completed review of cross-cutting needs and needs for local streets and roads*
  - *Provided online maps to review truck routes and land use information*
  - *Comments due Feb. 18*
- Complete Review of Needs Assessment Report
  - *Interregional/Intraregional highway and rail corridors*
  - *Global Gateways*
- Initiate Review of Strategies

Next Steps

- Technical Team provides a recommendation to full ACTAC to approve evaluation of the list of strategies (March 4/5)
- Strategies presented to PPLC for approval and to full commission for approval to evaluate (March 26)
- Strategy evaluation by consultant team completed and presented to Technical Team (May/June/July)
- Roundtable workshop to discuss strategy evaluation and to develop Goods Movement Plan recommendations (July)
- Adoption of Goods Movement Plan (winter 2015/16)

Review of Needs Assessment (Continued)

Needs Assessment Summary
Interregional and Intraregional Corridor Issues

Top 10 Truck Delay Locations in 2010 - AM

Source: INRIX 2014; Alameda County Truck Travel Demand Model; PeMS time of day distribution, Cambridge Systematics analysis.

Top 10 Truck Delay Locations in 2010 - PM

Source: INRIX 2014; Alameda County Truck Travel Demand Model; PeMS time of day distribution, Cambridge Systematics analysis.

Corridor Level Reliability, 2014

AM Peak

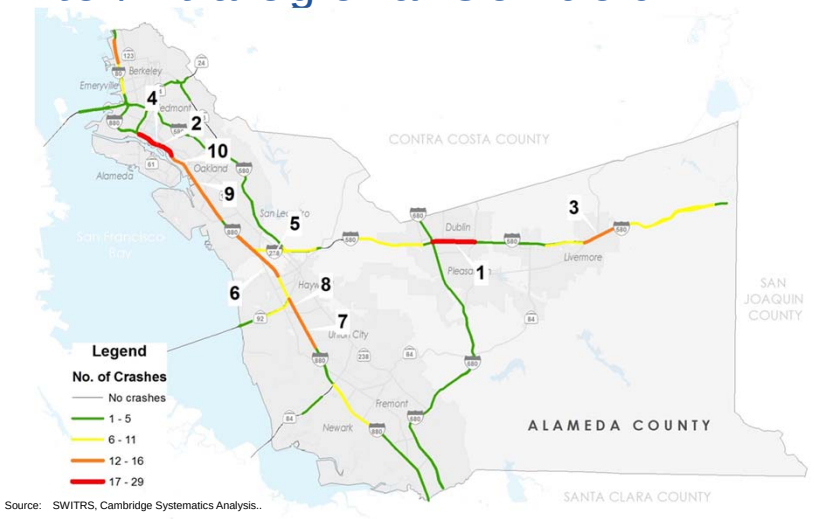
Corridor	Length	AM Peak Truck VMT	Average BTI	AM Peak Excess Truck Travel Time Budgeted (VMT*BTI)	Reliability Index (Reliability/Mile)
I-880 NB	25.5	4,598	0.50	2,299	90
I-880 SB	26.2	4,561	1.04	4,743	181
I-580 EB	32.7	7,156	0.10	716	22
I-680 NB	20.91	3,353	0.11	369	18
I-980 EB	2.44	166	0.17	28	12
I-980 WB	2.49	166	0.40	66	27
I-80 WB	6	1,186	1.67	1,981	330
SR 24 WB	4.58	161	0.52	84	18
I-238 EB	2.59	81	0.91	74	28
I-680 SB	18.36	3,263	0.42	1,370	75
SR 24 EB	4.53	126	0.11	14	3
I-580 WB	28.7	3,735	1.07	3,996	139
I-80 EB	4.87	1,348	0.044	59	12
I-238 WB	2.48	149	0.084	13	5

PM Peak

Corridor	Length	PM Peak Truck VMT	Average BTI	PM Peak Excess Truck Travel Time Budgeted (VMT*BTI)	Reliability Index (Reliability/Mile)
I-80 EB	4.87	1,896	1.68	3,185	654
I-80 WB	6	1,669	1.67	2,783	465
I-580 EB	32.7	10,068	1.38	13,935	425
I-680 NB	20.91	4,717	1.66	7,821	374
I-880 NB	25.5	6,470	1.37	8,838	348
I-880 SB	26.2	6,418	0.87	5,558	213
I-238 WB	2.48	210	1.15	241	97
I-980 WB	2.49	233	1.00	233	94
SR 24 EB	4.53	177	2.20	389	86
I-680 SB	18.36	4,591	0.23	1,047	58
I-980 EB	2.44	233	0.59	138	56
I-580 WB	28.7	5,255	0.30	1,577	55
I-238 EB	2.59	114	0.84	96	37
SR 24 WB	4.58	227	0.24	53	12

Source: INRIX 2014 Data and Cambridge Systematics Calculations.

Truck Involved Crashes - Inter/Intraregional Corridors



Source: SWITRS, Cambridge Systematics Analysis..

Congestion/Capacity Needs – Rail

Subdivision	From:	To:	Existing			2020		
			Freight Daily Trains	Total Daily Trains	LOS	Freight Daily Trains	Total Daily Trains	LOS
UP Coast	San Jose	Newark	8	30	F	10	42	F
UP Coast	Newark	Oakland	6	8	C	8	10	C
UP Martinez	Sacramento	Martinez	18	52	C	22	56	D
UP Martinez	Martinez	Richmond	18	60	D	22	66	E
UP Martinez	Richmond	Emeryville	17	59	D	30	74	E
UP Martinez	Emeryville	Oakland	17	57	D	30	72	E
UP Niles	Niles	Oakland	2	16	C	2	24	E
UP Oakland	Niles	Stockton	4	12	B	11	23	D
UP Oakland	Niles	Melrose	1	1	A	N/A	N/A	N/A
BNSF Stockton	Stockton	Port Chicago	10	18	C	12	22	D

Source: AECOM calculations.

Operations and Access Issues - Rail

- Changing nature and use of Northern California rail system
  - *Bulk unit trains and manifest traffic on Oakland/Niles to new terminals at Port of Oakland*
  - *Increasing domestic and international intermodal traffic on Martinez subdivision*
- Passenger and freight conflicts a critical issue
  - *Need to look for ways to separate and/or build in sidings and operational flexibility*
  - *Connections between UP Oakland subdivision and UP Niles subdivision through Niles Canyon – use of old Niles Railway*
  - *Capitol Corridor looking for separation through Emeryville, move from Niles to Coast Subdivision*

Operations and Access Issues - Rail

- BNSF access to OIG intermodal terminal at Port of Oakland crosses UP yard
  - *OAB north lead project planned to address this*
- Need for grade separations/signal improvements/street closures and quiet zones to reduce impacts on communities along heavily-used rail corridors

Needs Assessment Summary
Global Gateway Issues

Congestion and Capacity Needs – Seaports and Airports

- Port of Oakland has sufficient intermodal terminal capacity but needs expansion of bulk terminal/cold storage facilities
  - *Need to lengthen berths for large ships*
  - *Need to expand rail terminal capacity and access as markets develop*
  - *Need to strategically plan for reduction of impacts on neighboring communities*
- Bay Area airports have sufficient capacity for growth -- Highway congestion is key constraint for air cargo growth and reliability

Operations and Access Issues – Global Gateways

- Port of Oakland
  - *Improve ability to process large ships and control gate access (gate queues sometimes backing up to freeway ramps)*
  - *Eliminate access bottleneck caused by 7th Street grade crossing*
  - *Address bike and pedestrian access issues*
- OAK
  - *Address congestion issues on Hegenberger, 98th, and Doolittle*

Initial Review of Strategies

Strategy Development Process

- Matched identified needs with existing project proposals (CWTP/RTP, State Rail Plan, prior studies and plans)
  - *Identified gaps*
- Proposed new projects (or project types), programs, and policies for identified gaps
  - *New projects defined at a high level – Alameda CTC can support further project development by partner agencies*
  - *Not all projects/programs/policies are within Alameda CTC jurisdiction – implementation section of plan will describe necessary partnerships*

Discussion of Strategies

- Provide overview of types of strategies and their relationship to identified needs
  - *Some projects address a very specific need that may not be covered today*
  - *Strategies are only provided for those performance areas where performance was judged medium or low*
- What is a goods movement project?
  - *Loose definition for a project not originally developed to address a goods movement need – would need to still address a goods movement need in the absence of a passenger transportation need (e.g., an HOV lane is not a goods movement project)*

Needs and Strategies for Local Streets and Roads

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Reduce and mitigate impacts from goods movement operations to create a healthy and clean environment, and support improved quality of life for those communities most burdened by goods movement	Equity	Freight impacts, such as light, noise pollution, safety, air pollution, and encroachment on specific, adjacent communities most affected	🔴		• Tier 2 routes pass through residential areas • Truck routes form land use boundaries	• Complete Streets guidance (delivery windows, curb pullouts) • Night delivery pilots • Ensure truck services in industrial areas • LU buffers • Truck restrictions and enforcement
Provide safe, reliable, efficient, resilient, and well-maintained goods movement facilities and corridors	Freight-related crashes	Truck-involved crashes and crash rates (including crashes with bikes and pedestrians)	🟡	🟡	• Truck-involved crashes at freeway access locations	• Signal timing and improvements • Ramp metering • Turn pockets and storage for trucks
		Crashes at grade crossings	🟢		• Generally few crashes at most crossings; some crossings require attention • Rail impacts on communities	• Selective grade separations • Trenching of track • Signal improvements • Quiet zones

🟢 High 🟡 Medium 🔴 Low

Needs and Strategies for Local Streets and Roads

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Preserve and strengthen an integrated and connected, multimodal goods movement system that supports freight mobility and access, and is coordinated with passenger transportation systems and local land use decisions	Travel time delay	Travel time delay on freight (truck) routes	🟡	🔴	• Poor LOS on Tier 3 routes • Poor LOS on selected arterials	• Selective widening • Smart corridors • Signal timing and prioritization • Freeway access ramp improvements
	Multimodal connectivity and redundancy	Freight routes access from/ to locations with significant freight activities	🟡	🟡	• Improve freeway connectivity in identified locations • South County E-W connectivity • Truck route connectivity from Tier 2 routes to freeways • Expand O/W network	• New truck route designations with time of day regulation • Selective upgrading of routes for trucks • Revisit OW network Oakland/San Leandro
	Coordinate with passenger systems	Freight system element shared use with passenger system and addresses passenger/freight conflicts	🟡	🟡	• Truck routes on high frequency bus routes • Bike and ped routes on truck routes	• Time of day mgt • Bike and ped separations • Delivery pullouts
	Compatibility with land use decisions	Locations and corridors with significant freight activities in proximity to noncompatible land uses currently and in the future	🔴	🔴	• Non-industrial uses encroach on freight corridors • LU issues identified under Equity	• Guidance/funding criteria for buffers around freight corridors • See Equity

🟢 High 🟡 Medium 🔴 Low

Needs and Strategies for Inter/Intra-Regional Highway Corridors

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Provide safe, reliable, efficient, resilient, and well-maintained goods movement facilities and corridors	Travel Time Reliability	Buffer index on freight (truck) routes	🔴	🔴	• Significant reliability issues along major corridors	• Improve operations at interchanges (improved geometrics, aux lanes, lengthen merges) • Incident management • Truck bypasses • Selective use of left most lanes for truck movements • Improved signage for truck movements
	Freight-Related Crashes	Truck-involved crashes	🟡	🔴	• Highest crash locations on I-880 and I-580 • Crash rates highest near high volume interchanges	• Safety improvements at interchanges (aux lanes, lengthen merges, geometric improvements) • Truck bypasses • Improved signage for truck movements
	Freight Infrastructure Conditions	Bridge and pavement conditions	🟢	🟢	• Conditions generally good but selective needs	• Targeted bridge and pavement reconstruction - link to increasing vertical clearances

🟢 High 🟡 Medium 🔴 Low

Needs and Strategies for Inter/Intra-Regional Highway Corridors

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Promote innovative technology and policy strategies to improve the efficiency of the goods movement system	Use of Innovative Technologies	Use of ITS and innovative technologies	🟡	🟢	• Some existing DMS on freeways, and ramp metering. • Expected future Adaptive Ramp Metering and Active Traffic Management	• Link corridor ATIS to port ITS • Link arterial ITS/DMS on truck routes to freeway systems
Preserve and strengthen an integrated and connected, multimodal goods movement system that supports freight mobility and access, and is coordinated with passenger transportation systems and local land use decisions.	Travel Time Delay	Travel time delay on freight (truck) routes	🔴	🔴	• Significant delay on many truck corridors	• Selective widening/lane additions • Managed lanes/shared use of HOT/HOV lanes • Aux lanes to reduce lane drops at bottlenecks • ITS • Truck-only lanes • Expanded domestic intermodal capacity to reduce truck moves from Valley intermodal facilities • Long-term development of alternate modes (e.g., short-haul rail)

🟢 High 🟡 Medium 🔴 Low

Needs and Strategies for Inter-Regional Rail Corridors

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Preserve and strengthen an integrated and connected, multimodal goods movement system that supports freight mobility and access, and is coordinated with passenger transportation systems and local land use decisions.	Travel Time Delay	Travel time delay on railways, terminals, ports, airports (measured in terms of capacity)	Medium	Medium	• Growth in intermodal and bulk traffic straining Martinez, Oakland, and Niles Subdivisions • Expansion of domestic intermodal terminal capacity needed	• Expanded capacity and coordinated strategy for Niles and Oakland Subdivisions • Capacity improvements on Martinez Subdivision • Domestic intermodal terminal capacity improvements (Oakland Army Base)
	Coordinate with Passenger Systems	Freight system element shared use with passenger system and addresses passenger/freight conflicts	Low	Low	• Expansion of ACE and Capitol Corridor service will strain capacity on several lines	• Expanded track and sidings to allow for freight and passenger separation • ROW acquisition to allow for expanded capacity

High Medium Low

Needs and Strategies for Global Gateways

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Promote innovative technology and policy strategies to improve the efficiency of the goods movement system	Use of Innovative Technologies	Use of ITS and innovative technologies	Medium	Medium	• Limited use of advanced technology to address gate queues • No link between terminal operations information and access route information	• Freight ITS (FRATIS) • Link corridor ATIS to port ITS • Appointment systems linked to FRATIS
Preserve and strengthen an integrated and connected, multimodal goods movement system that supports freight mobility and access, and is coordinated with passenger transportation systems and local land use decisions.	Travel Time Delay	Travel time delay on railways, terminals, ports, airports (delays and capacity)	Low	Low	• Gate queues • Truck delays at grade crossings • Limited bulk terminal capacity for growing demand • Longer-term need for intermodal terminal capacity • Limited local warehouse and transload capacity	• Labor, automation, and terminal operations improvements • Expansion of bulk and cold storage terminal improvements • Longer-term expansion of intermodal terminal capacity • Expanded transload capacity needed for growing container cargo demand

High Medium Low

Needs and Strategies for Global Gateways

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Preserve and strengthen an integrated and connected, multimodal goods movement system that supports freight mobility and access, and is coordinated with passenger transportation systems and local land use decisions.	Multimodal Connectivity and Redundancy	Access to rail lines, terminals, ports, and airports from/to locations with significant freight activities	Medium	Medium High	Rail access and local circulation issues around 7th St. grade crossing Circulation issues on Maritime, Middle Harbor and ramp access from I-880 Rail access issues to OIG and new OHIT terminal Congestion on access routes to OAK	Grade crossing improvements North rail access to intermodal terminals Local circulation improvements Airport ITS improvements
	Coordinate with Passenger Systems	Freight system element shared use with passenger system and addresses passenger/freight conflicts	High	Medium	Potential conflicts with bike and pedestrian trails on truck routes on access to marine terminals	Identify alternative bike/ped routes Physical separations for bike and ped routes

High Medium Low

Needs and Strategies for Global Gateways

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Promote innovative technology and policy strategies to improve the efficiency of the goods movement system.	Travel Time Delay	Travel time delay on railways, terminals, ports, airports (measured in terms of capacity)	Medium	Medium	• Growth in intermodal and bulk traffic straining Martinez, Oakland, and Niles Subdivisions • Expansion of domestic intermodal terminal capacity needed	• Expanded capacity and coordinated strategy for Niles and Oakland Subdivisions • Capacity improvements on Martinez Subdivision • Domestic intermodal terminal capacity improvements (Oakland Army Base)
	Coordinate with Passenger Systems	Freight system element shared use with passenger system and addresses passenger/ freight conflicts	Low	Low	• Expansion of ACE and Capitol Corridor service will strain capacity on several lines	• Expanded track and sidings to allow for freight and passenger separation • ROW acquisition to allow for expanded capacity

High Medium Low

Needs and Strategies for Cross-Cutting Issues

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Reduce and mitigate impacts from goods movement operations	Emissions/ Air Quality/ Public Health	Tons of $PM_{2.5}$ emissions	●	●	• $PM_{2.5}$ emission from freight levels have been decreasing steadily, though disproportionate impacts existing in certain communities	• Incentives for engine retrofits to low and zero-emission technology • ZEV technology demonstrations for trucks • Low emission rail terminal operations • Voluntary agreements for adoption of Tier 4 locomotive technology • Air filters and improvements for mitigations
	Equity	Freight impacts, such as light, noise pollution, safety, air pollution and encroachment on specific, adjacent communities most affected	●	●	• Freight operations contribute significantly to pollution in specific neighborhoods, and create other health risks.	• See above • Coordination of truck route planning in industrial areas with restrictions and enforcement in adjacent residential areas • Land use controls to ensure truck services out of neighborhoods

● High ● Medium ● Low

Needs and Strategies for Cross-Cutting Issues

Goals	Measures	Metrics	Current Rating	Future Rating	Needs	Strategy
Promote innovative technology and policy strategies	Use of Innovative Technologies	Use of ITS and innovative technologies, such as zero-emission technologies	●	●	• In 2020-23 timeframe, most emission reductions from current programs will have been realized	• ZEV technology demonstration • FRATIS for port efficiency improvements
Provide safe, reliable, efficient, resilient, and well-maintained goods movement facilities and corridors.	Freight Resiliency	Addresses freight system vulnerability to major service disruptions due to major natural or other events	●	●	• Moderate vulnerability to sea level rise • Moderate risk of OAK runway flooding	• Adaptation strategies • Improve airport perimeter dike
Preserve and strengthen an integrated and connected, multimodal goods movement system.	Compatibility with Land Use Decisions	Locations and corridors with significant freight activities in proximity to noncompatible land uses currently and in the future	●	●	• Industrial land shortage creating "freight sprawl" • Conversion of industrial land encroaching on freight corridors • Lack of truck parking	• Land use guidance on strategies for industrial land preservation • Incentives to preserve buffers around freight corridors • Monitor implementation of OAB truck parking provisions • ID sites for overnight parking

● High ● Medium ● Low

Needs and Strategies for Cross-Cutting Issues

Goals	Measures	Metrics	Current Rating	Future Rating		Strategy
Increase jobs and economic opportunities that support residents and businesses.	Economic Contribution	Jobs and output generated (including co-benefits of public health strategies)	●	●	• Near-term truck driver shortages • Near-term lack of logistics professionals • Continued lack of job opportunities in communities close to freight hubs	• Training and workforce development programs coordinated through community colleges • Continued job creation and outreach to communities close to freight hubs

● High ● Medium ● Low

Questions for Reviewing Strategies

- Do strategies sufficiently address identified needs?
- Should any of the strategies identified not be evaluated?
- Are there additional strategies that should be evaluated?
- Do the project descriptions reflect your current understanding of the project?