

Goods Movement Action Plan Phase I - FACTSHEET

THE CURRENT SITUATION AND ISSUES – *select quotes*

General policy

- “In elevating the discussion to a statewide level, the challenge is to preserve the integrity of the local and regional processes while finding a means to distill common elements that can benefit from a statewide approach.” – preface
- “While California serves as an important hub in the global goods movement network, the State’s large population and market size create huge demands on the goods movement-related infrastructure within its own borders. Even if California was landlocked without seaports and did not provide goods movement services to the rest of the country, it would still require a complex and sophisticated goods movement infrastructure to serve its residents.” I-1
- “The States economy and quality of life depend upon the efficient, safe delivery of goods to and from our ports and borders.” CalEPA letter
- “In summary, maintaining an efficient, safe, and flexible goods movement system is of extraordinary importance to California’s economy, its people, and its future. Failure to keep pace is not an option.” I-7
- “Even if California was a landlocked state without seaports and did not provide goods movement services to the rest of the county, it would still require a complex and sophisticated goods movement infrastructure to serve it sown residents.” II-2
- “Effective solutions can be developed and opportunity loss minimized only through governmental action in conjunction with the goods movement industry’s shipper, receiver, carrier, and other stakeholders.” IV-16
- “The communities adjacent to the States goods movement corridors have endured a disproportionate share of the impacts from a system that provides statewide and nationwide benefits.” PI-7

Overview of the Industry

- The state moves 13.5% of total US exports/ 110B\$ of commodity flow (2004) pI-1
- The state is worlds 6th largest economy (2004) pI-2
- GM industry is 1 in 7 jobs in the State, resulting in \$200 billion to State economy, \$16 billion in state & local taxes (2005) pI-3
- cargo containers will double or triple over next 15 –20 years.
- “experience to date has been that most forecasts of goods movement demand have proven conservative.” II-3
- “For the most part the goods movement process is taken for granted by the public.” II-1

- “The speed, accuracy, and efficiency of such operations are astonishing accomplishments, considering that there is no centralized control of “the system”.” II-1
- Instead several various parties make independent decisions:
 - shippers
 - terminal operators
 - rail operators
 - truckers
 - retailers
- “The complexity stems from the fact that the goods movement “system” is not an integrated, self-contained operation. It is a collection of public and private entities and associated facilities that engage in complex handoffs from one to the other.” II-4
- “. . . goods movement is a complex process involving a wide range of participants each operating under different jurisdictions, different objectives, and producing different community, environmental, and economic impacts.” III-1
- “secure statewide consensus on projects when pursuing federal support.” III-3
- Supply chain is essentially a circle influenced heavily by customer demand
- GM actors:
 - Inventory
 - Financial information
 - Management systems
 - Brokers
 - Customs agents
- “Consider all goods movement infrastructure and related operations throughout the State as party of one integrated, multi-modal system regardless of funding or ownership.” III-2
- “Recognize project benefits within, between, and among goods movement corridors that are otherwise ignored or undervalued.” III-2 [Identify on Map, places where 5 corridors overlap]
- “Gaining consensus on a statewide basis for the major elements necessary to build out the State’s goods movement system helps provide the confidence needed by the private sector to determine how best to make private and public-private investments that add value to the system.” III-3
- Stakeholders outside of CA control:
 - Other states
 - Federal government
 - Foreign carriers
 - Retailers
 - Railroads
 - Logistics companies
- “Operating at the State level with these stakeholders improves the State’s overall position as compared to merely allowing each region and locality to vie for attention separately.” III-3
- “Expand awareness of the importance of goods movement industry to Californians. Just as the goods movement industry is a critical element of the State’s economy,

having the support and confidence of the people of California is critical to expanding the infrastructure and mitigating the impacts of the industry's operation." III-3

- "Ultimately, consumers make the final judgement as to who has done the best job of providing the best products at the best prices as the right time and in the right place." II-1
- "While California is the "natural" entry point for many foreign goods entering the country . . . " III-1
- "The States strategic Pacific Rim location has long made California a key crossroad of global goods movement capability. However, the growing importance of supply chain management couple with Chinese manufacturing prowess have transformed California into the entrepot for the nation – the primary point of arrival and departure for goods entering and leaving the country." II-2
- CA moving goods to America and providing for its own population "has nurtured the growth of a high concentration of speciality firms within the State that service the flow of goods. These firms not only include transport and warehousing companies but [specialty] banks, law firms, insurance providers, software developers, logistics specialists, and others that perform complex supply china management functions."
- "The ability to reach vendors, suppliers, and customers on a worldwide basis with a speed and costs that are difficult to achieve from other US locations provides a key source of comparative advantage to retain and attract industry in and to the State." II-3
- without adequate investment to State infrastructure – performance will deteriorate, which will cause job loss, which will cause economic loss.
- Failure to keep pace will also cause increased congestion. II-4
- "The overall "throughput" of each corridor is limited by the capacity of the most constrained segment" II-4
- "It is becoming increasing clear that even if seaports had all of the capacity they wanted, the landside infrastructure in California and the rest of the nation is simply not adequate to keep up with rising container and freight volumes." IV-16
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- Michael Porter's "value chain" set the concept in motion that innovative execution of logistics can provide important differentiation that creates competitive advantage in the marketplace." II-1
 - Goal of these different activities is to create value that exceeds the cost of providing the product or service, thus generating a profit margin
 - Inbound logistics->Operations->outbound logistics->marketing/sales->service
 - Inbound logistics: receiving, warehousing, inventory control
 - Operations: value creating activities that transform inputs into final product
 - Outbound logistics: activities to get finished product to consumer, warehousing
 - Marketing and sales: getting buyers to purchase the product, advertising
 - Service: activities that maintain and enhance value, customer support, repair
 - Competitive Advantage: Creating and Sustaining Superior Performance, 1998. (6 years before 2004 port shut down)

- “As more and more products become “commoditized,” successful companies must add a timing dimensions to the traditional “product,” “price,” and “promotion,” aspects of their marketing strategy.”II-1
- “Advances in logistics enable firms to pass on to their customers the benefits of low cost production from distant vendors and suppliers couple with speed to market that was previously unobtainable. For example, “Just-in-time” delivery through out the value chain provide major reductions in inventory costs that help offset the costs of increased transportation activity. These advances have transformed the traditional “supplier push” trading process (“what do you have?”) into a “demand pull” (“Do you have what I want?”) consumer focus.” The power has shifted from suppliers to consumers II-1

History of the GMAP:

- Fall 2004 LA/LB ports shutdown for 6 months. IV-16
- This was due to four factors:
 - Shortage of rail cars
 - Shortage of port workers
 - 90 ships per day forced to wait
 - 124 ships were diverted to other ports IV-16
- In response, in June 2004 the Governor assembles GM stakeholders to develop GMAP I.

GOALS: Guiding principles of GMAP: III-1

1. generate jobs
 2. increase mobility/ relieve traffic congestion
 3. improve air quality/ protect public health
 4. enhance public/ port security
 5. improve quality of life
- Goal of GMAP is to create “virtuous circle” where programmed projects now induce economic benefits which create funding streams down stream. III-1

KEY STEPS: III-2

- Evaluate prospective projects
- Build consensus
- Maintain focus
- Exercise clout
- Build synergies

SYNERGIZE WITH OTHER STATE INITIATIVES: III-4

- housing
- land use
- agriculture
- international trade
- economic development

- military base re-use
- energy resources

SHORT TERM RELIEF MEASURES: V-22

- Pier Pass – traffic mitigation fee of 40\$ for each TEU during daytime hours. Free to pick up at off-peak hours. Goal is to shift 40% of container movements to off-peak.
- Port-wide terminal appointment system for truckers [status]
- On-Dock rail yards
- Ocean carrier container loading on ships by ultimate destination
- Incentives to reduce marine dwell time for containers
- Virtual Container Yard
- On-dock, Near-dock (4.5miles), Off-dock (20 miles). V-23
- Shuttle train project – principle problem is more expense than trucking for short haul
- Short-Sea shipping – Hueneme looking into

International shipping

SHIP SIZE:

- 75% of Cargos to LA/LB are 40 ft TEU IV-11-IV-15
- Shipping industry already moving to 10,000 TEU and 12,500 TEU ships IV-4
- Key factors driving increase in ship size: IV-4
 - Propulsion efficiency
 - Terminals can physical berth these ships
 - Capacity of terminals to offload these ships faster
 - Capacity of terminals to deliver and dispatch large consignments of containers
 - Effectiveness of hinterland linkages
 - Maximum stack heights

OTHER WEST COAST PORTS:

- all are physically closer to China IV-7
 - Seattle -
 - Tacoma – completed terminal expansion at Evergreen, several dredging and rail projects
 - Portland – because of inland location has been losing container business. However, spending 89\$M on container expansion to double capacity to 800,000 TEU.
 - Vancouver, BC – working on 2 container facility expansion projects, to expand TEU capacity to 5M by 2020

MEXICO PORTS: IV-7

- Major problems:
 - duplicate clearance,
 - border crossing congested,
 - lack of infrastructure,
 - lack of port services

- Manzanillo – largest container port in Mex, only facility able to handle largest ships, 1.2M TEU capacity, operated by Hutchinson Port Holdings
- Punta Colonet – Hutchinson Port Holdings will invest 1.2\$B to develop deep-water port, 125miles south of Ensenada, to handle 1.5M TEU, new rail line will connect to Eagle Pass, Texas US rail
- Ensenada – 50,000 TEU capacity, dredging now to allow for larger ships, Hutchinson Port Holdings controls container port for 20 years
- Lazaro Cardenas – 250,000 TEU a year, linked to Kansas City southern railline., Hutchinson Port Holdings build with investment of 244\$M
- Veracruz – in gulf coast, handles more total volume than Manzanillo, but not container volume, mostly oil. Hutchinson Port Holdings operates a container terminal here.

OTHER ACCESS POINTS TO AMERICAN MARKET BESIDES PACIFIC OCEAN IV-9-IV-10

- Port of Houston - Ranked 1st in waterborne commerce – oil, Baypoint container terminal construction underway – 1.2B\$, bring capacity to 2.1M TEU, Walmart has built 2M sq ft facility near the port specifically to avoid West Coast delays.
- Panama Canal – currently can't handle post-panamex ships., plans to add a third channel to accommodate ships for 10,500 TEU, but raising funds is difficult – project would cost from 2-12B\$, and countries economy is 12B\$, however, raised tolls by 12% in 2003 without any loss in revenue
- Suez Canal – takes 29 days to reach Boston from India, China. 5 days longer than going through West Coast!

CALIFORNIA PORTS IV-11-IV-15

- \$910 million Alameda Corridor East project extend the original Alameda corridor 35 miles east to Pomona. V-7
- Public Policy Institute of California (PPIC) – forecast 87% growth in imports/ 148% growth exports IV-11
- FHWA estimates value of international trade to grow 309%/ tonnage to grow 85%
- LA customs district – \$262.3 billion of value of two way trade in 2004
- SF customs district – \$80.8 billion of value of two way trade in 2004
- CA seaports handled 43.4% of container volume 2003. Of this:
 - LA/LB port: 50-70% (2/3) of volume went to regions outside of CA
 - OAK port: 20-30% (1/3) of volume went to regions outside of CA
- PPIC – dollar value of imports to grow 80%, dollar value of exports grow 187%
- PPIC – tonnage of imports to grow 201%, tonnage of exports grow 252%
- 2005 = 16.7M TEU total for CA
- 2004 = 15.1M TEU (13.1M for LA/LB & 2 M for Oak)
- 2005 – 2020 projected to grow by 25.3M TEU
- Ultimate “throughput capacity” for LA/LB = 28-30M TEU
 - This assumes:
 - No new landfill
 - Minimal development of vacant land

- Minor redevelopment of terminals
- 24/7 operations
- increased amount of container stacking
- increased stack heights
- reduced container dwell time
- upgraded information systems to assign, track containers
- enhanced on-dock rail operation

Goods Movement by region:

SAN DIEGO: V-3-V-4

- SD border with Mexico = 150 miles
- Mexico surpassed Japan in 1999 to be top market – now it is China v-2
- Trucks transport 98% of this trade
- 893 Maquiladoras in 3 cities – Tijuana, Tecate, Mexicali
- Central Valley - 8 of 10 fastest growing counties in California V-4
- Central Valley – provides ½ of all fresh fruits and vegetables to America – generating \$10 billion in annual revenue
- Global Gateways identified routes of 5 Axle trucks over 3000. V-6
- I-15 to Nevada
- I-10/ I-40 to Arizona
- 78% of all trade destined for areas outside SD V-14
- 57% of truck trips are to other CA counties
- 21% of truck trips are to other us destinations or international
- Otay Mesa port processes 70% of trade between CA and Mex V-14
- I-5 is the main truck route
- Burlington Northern carried imported auto brought in from Port of SD V-15
- 10th ave Marine Terminal & National City Marine Terminal 24th st = 2.5M TEU
- SD interested in identifying new site for airport
- Truck miles to increase from 1,089B in 2005 to 1,745B by 2025 VI-3,VI-14

LOS ANGELES: V-1-V-3

- LA/LB ports generated 40K truck trips per day 2005, 50K by 2010, 92K by 2020 V-7
- I-710 is the most impacted route – has highest truck accident rate in State
- Burlington Northern yards impacted – East La, and SBD
- 20 mile Alameda Corridor cut transit time in ½ after completion, slashed emissions
- However, full potential can not be reached until more mainline added & yard capacity
- AC – 1st largest is LA, 4th is Ontario V-7
- LA/Inland empire region truck miles – 6,676B 2005 to 10,403B by 2025 V-6
- LA/Inland empire rail volumes – 112 trains 2000, 165 by 2010, 250 by 2025 V-7
- 82% of containers in LA are trucked V-23

BAY AREA: V-3

- Port of Oak – containers
- SF – limited containers
- Redwood – construction materials
- Richmond – petrol and auto imports
- Benicia – petrol and auto imports
- SF Airport – focus on international freight V-12
- Oak Airport – focus on domestic freight
- Air cargo volumes are expected to triple by 2020 V-12

CENTRAL VALLEY: V-4

- Truck miles to increase from 4,677 in 2005 to 7,758 in 2025
- UP Donner Pass Line – can not handle double stacked trains V-20
- Increasing congestion in LA, Inland empire, and central Valley already causing congestion on 395 V-20

Emission:

EMISSIONS REDUCTION PLAN: VI-12, A-1-A-2

- To be created to work in line with the GMAP, will be developed for Dec 2005
- 3 key elements will be used:
 - Operational improvements
 1. “In addition, finding prospective improvements **between and among** California’s four port to border corridors have been problematic”
 2. Improvements that can provide congestion relief and emissions reduction
 3. Improve system performance
 4. Increase utilization of existing assets
 - GM Infrastructure prioritization
 1. Velocity enhancement
 2. Throughput capacity
 3. Predictability of transit time
 4. Reduce overall traffic congestion
 5. Reduce air emissions
 - “The method for prioritizing goods movement projects is an evolving discipline.”
 - Project Delivery
 1. Public private partnerships
 2. Design-build
 3. Design-sequencing

ASSOCIATED COSTS FOR PLAN:

- “The Governor, through his Environmental Action Plan, has committed to reduce Air pollution by 50 percent. To accomplish this reduction in overall pollution, the current growth in goods movement-related emissions will need to be reversed . . . “p.I-3
- \$3.9 billion for improvement projects + \$43.4 billion for planned & proposed projects = \$47.3 billion in infrastructure projects
- Air emissions impact estimated at \$2-5billion
- Cost of other community impacts “not yet been quantified”
- “Air quality and community impact mitigation must be fully integrated into goods movement system improvements.” III-2
- “Relating the importance of goods movement projects and environmental improvement to the State’s economic wellbeing will help keep projects on schedule and provide motivation for aggressive action to relive local communities from unfavorable goods movement-related impacts.” III-3

EMISSIONS PLANS AND ACTIONS

- Emissions regulations first appeared in 1970s. It was not until 1990s that the regulations began to have effects on the environment. It will be therefore 10-20 years before regulations now will have a real effect. V-24
- Diesel truck emissions are increased during acceleration – therefore stop and go traffic is very bad for emissions
- Emissions are most minimal under moderate speed, smooth-flowing traffic

GOODS MOVEMENT AND ENVIRONMENT FUNDAMENTAL LINK

- “Should traffic decline and goods movement jobs fall as a consequence, so will State and local revenues. This will stress public funds available for needed environmental mitigation.” III-1
- “. . . unmitigated congestion would contribute to additional emissions and would further erode productivity increasing the cost of goods for all Californians while failing to generate sufficient revenues to cover the costs of mitigation.” III-2
- “A reduction of trucks on highways will lead to a reduction in highway maintenance costs.” V-24
- “In order for California to accommodate the forecasted growth in goods movement and protect public health, significant penetration of the above-described strategies into the California goods movement industry must occur.” VI-1
- “The communities adjacent to the States goods movement corridors have endured a disproportionate share of the impacts from a system that provides statewide and nationwide benefits.” PI-7
- There are national and international components to regulation of emission from trucks, rail, and ships VI-3
- “California must rely on the federal government to take a leadership role where state and local agencies lack authority or where emissions sources travel nationally or internationally.” VI-3
- Visual blight from locomotives producing smoke is a concern
- Estimated NOX for 2005: VI-8
 - On-road trucks = 270

- Gasoline vehicles = 260
- Off-road equipment = 150
- Port-related = 150
- Stationary sources = 25
- CEIDARS – ARB California emissions inventory development and reporting system
- Diesel PM (not just from Goods Movement) = 70% of ambient air toxic risks in CA
- LA/LB ports = 10% of NOX and 25% of Diesel PM in 2001
- Oak port = 5 % of NOX and 10% of Diesel PM in 2001
- Tripling of trade at LA/LB = 40% increase NOX and 50% diesel PM

RAIL STRATEGY AND EMISSIONS

- “Also, by allowing more trains to go directly to the docks for loading and unloading, the need to dray containers by truck between ports and railheads will be reduced.” V-24
- “In terms of air quality, fuel efficiency and manpower, railroads are the most efficient means of transporting freight.”
- Trains are 3X more fuel-efficient than trucks
- One train can take 280 trucks off road V-24
- Rail solutions = VI-20
 - increase use of on-dock loading
 - more efficient use of containers
 - double and triple track
 - rail shuttles between ports and intermodal facilities
- Tier 3 trains – will apply to those manufactured in 2011 and beyond, could reduce NOX and PM by 90% VI-17
- Useful life of a train can exceed 30 years
- UP yard in Roseville – concluded that 45% of diesel PM from train idling VI-18
- Cleaner locomotives introduced in 2005
- Second set of fed standards for trains and ships set for 2012
- Roseville Rail yard study – want to do one for Barstow, Colton, Stockton, Richmond, and Commerce A-3
- ARB signed MOU with UP and BNSF on pollution reduction A-3

OCEAN SHIPS

- Ocean ships = only category that no significant improvements foreseen!
- “. . . ship emissions are growing and will contribute most of the port-related emissions in the future. This is the primary reason for an upward trend and the primary challenge California must overcome.” VI-
- “. . . larger container ships general result in fewer emissions per container transported compared to the transport of the same number of containers with a greater number of smaller vessels.” VI-15
- “Health risks are highest in areas with large amounts of emission, such as next to ports, rail yards, major freeways, and warehouse distribution centers.” VI-4
- Cities with health problems from Seaport = West Oakland, Roseville, San Pedro, Wilmington, Commerce A-3

- Regional background risk in urban areas = 500-800 potential cancers/ million people/ over 70 year period VI-4
- Areas in close proximity to diesel fumes can double risk rate
- The risk decreases the further one moves away from Goods Movement centers
- South Coast Air Basin = ½ of state total, aka 1,700 premature deaths per year, 45,000 asthma cases, 390,000 lost work days, 3.8M restricted activity days for children. VI-5
- Cargo-handling equipment & ship-hoteling services are largest contributors to neighborhoods emissions
- Ocean ships contribute substantial portion - but do not produce high cancer risk VI-3 because fumes are dispersed. A- high smoke stack heights (50 meters avg), B – 90% of emissions are in transit in the ocean VI-5
- Ship emission are dominant with PM, and NOX but are less damaging than other modes At the port. VI-11
- Fuels used by ships are the least expensive and most polluting with high sulfur VI-3
- SECA – sulfur emissions control area - would limit sulfur content of fuels to 1.5% eliminating PM by 20% and Sulfur oxides by 40% VI-14
- ARB developing “marine gas oil” would reduce PM by 60%, Sulfur oxides by 90%, and nitrogen oxides by 10% VI-14
- Shore-power = “cold-ironing” could reduce NOX and PM by 90%
- Strategies to unload or load a vessel faster can reduce emissions VI-15
- “A third option to reduce diesel PM and NOX emissions at ports is to improve the efficiency of the process of transferring containers to trucks.” VI-17
- “Improving the efficiency of the systems and equipment designed to move cargo at ports reduce both the emissions and the cost of goods delivery.”VI-22
- 50% of time intermodal marine containers are empty! VI-20
- Baltic Sea ports have program where vessels pay different fees based on how polluting they are VI-22
- In addition, there is another type of pollution from ships; ballast water = non-indigenous species, re-suspension of toxic constituents in soil, pollution of ambient water at dredge location, pollution of ground water VI-2
- “Charges could be imposed to encourage less polluting choices. Issues such as legal authority, collection and distribution mechanisms, and impacts on the competitive position of California ports would require extensive review before such action could be considered.” VI-22
- Bringing south coast air basin pollution back to 2001 levels by 2010 would require 20,000 tons of NOX and 1,900 tons in PM to be reduced, for a cost of 100-200M\$ VI-23

TRUCKS

- Average port truck is 12 years old VI-16
- 28% of truck fleet is 16 years old
- New trucks generate 80% less diesel PM than a 1988 model
- In 2007, engine manufacturers offer on-road trucks that generate 90% less diesel PM than the 2004 model! VI-17